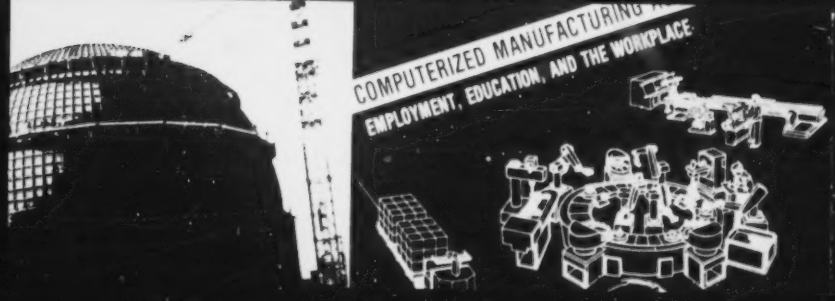

Technologies a
Management Strategi
for Hazardous Was
Contr

CONGRESS OF THE UNITED STATES
Office of Technology Assessment

LIST OF PUBLICATIONS

An Assessment of Maritime Trade and Technology

TECHNOLOGY AND HANDICAPPED PEOPLE

COMMERCIAL BIOTECHNOLOGY
An International Analysis

INDUSTRIAL ENERGY USE

Water-Related Technologies

TECHNOLOGIES TO SUSTAIN TROPICAL FOREST RESOURCES

nternational Competitiveness n Electronics

WETLANDS THEIR USE AND REGULATION

U.S. PASSENGER RAIL TECHNOLOGIES

Wood Use
U.S. Competitivenes and Technology

OTA-P-58 (Rev. May 1984)

Office of Technology Assessment

Congressional Board of the 98th Congress

MORRIS K. UDALL, *Arizona, Chairman*

TED STEVENS, *Alaska, Vice Chairman*

Senate

ORRIN G. HATCH
Utah

CHARLES McC. MATHIAS, JR.
Maryland

EDWARD M. KENNEDY
Massachusetts

ERNEST F. HOLLINGS
South Carolina

CLAIBORNE PELL
Rhode Island

House

GEORGE E. BROWN, JR.
California

JOHN D. DINGELL
Michigan

LARRY WINN, JR.
Kansas

CLARENCE E. MILLER
Ohio

COOPER EVANS
Iowa

JOHN H. GIBBONS
(Nonvoting)

Advisory Council

CHARLES N. KIMBALL, *Chairman*
Midwest Research Institute

EARL BEISTLINE
University of Alaska

CHARLES A. BOWSHER
General Accounting Office

CLAIRE T. DEDRICK
California Land Commission

JAMES C. FLETCHER
University of Pittsburgh

S. DAVID FREEMAN
Tennessee Valley Authority

GILBERT GUDE
Library of Congress

CARL N. HODGES
University of Arizona

RACHEL McCULLOCH
University of Wisconsin

WILLIAM J. PERRY
Hambrecht & Quist

DAVID S. POTTER
General Motors Corp.

LEWIS THOMAS
Memorial Sloan-Kettering Cancer Center

Director

JOHN H. GIBBONS

Preface

The Office of Technology Assessment (OTA) was established by Congress to provide committees with analytical assistance on difficult issues which involve science and technology. Governed by a bipartisan, bicameral congressional board, OTA provides a variety of services to the Senate and House on a broad range of issues. Services run the gamut from testimony and briefings to major assessments requiring more than 2 years to complete. OTA makes technical findings, identifies and describes options, but does not advocate particular policies.

OTA's multidisciplinary staff plans, directs, and drafts all assessments. It draws extensively on the broad technical and professional resources of the private sector, including the universities, research organizations, industry, and public interest groups.

The publications listed in this brochure are the result of various assessments and analyses requested by the committees of Congress. This listing, organized by OTA Program area, will be revised periodically as further reports are published by OTA.

JOHN H. GIBBONS
Director

Library of Congress Catalog Card Number 77-600064

Contents

Page

General Information iv
- Categories of Reports Issued by OTA iv
- How To Obtain OTA Publications iv
- Ordering Information v

Publication Category

Energy, Materials, and International Security Division 1
- Energy and Materials 1
- Industry, Technology, and Employment 9
- International Security and Commerce 14

Health and Life Sciences Division 17
- Biological Applications 17
- Food and Renewable Resources 18
- Health 24

Science, Information, and Natural Resources Division 32
- Communication and Information Technologies 32
- Oceans and Environment 34
- Science, Transportation, and Innovation 38

Specialized Reports 42

Administrative 43

NTIS Order Form 44

GPO Order Form 46

GENERAL INFORMATION

Inquiries concerning the overall operation of the Office of Technology Assessment or the nature and status of ongoing assessment studies may be obtained by writing or calling:

U.S. Congress
Office of Technology Assessment
Congressional and Public Affairs Office
Washington, D.C. 20510
Telephone (202) 226-2115

Categories of Reports Issued by OTA

OTA Reports are the principal documentation of formal assessment projects. These projects are approved in advance by the Technology Assessment Board. At the conclusion of a project, the Board has the opportunity to review the report but its release does not necessarily imply endorsement of the results by the Board or its individual members.

OTA Technical Memoranda are issued on specific subjects analyzed in recent OTA reports or in projects presently in process at OTA. They are issued at the request of committees or Members of Congress who are engaged in committee legislative actions.

OTA Background Papers and Case Studies are documents that contain information that supplements formal OTA assessments or is an outcome of internal exploratory planning and evaluation. The material is usually not of immediate policy interest such as is contained in an OTA Report or Technical Memorandum, nor does it present options for Congress to consider.

How To Obtain OTA Publications

Most OTA publications listed in this brochure are available for sale through the Government Printing Office (GPO) and/or the National Technical Information Service (NTIS). In addition, many of OTA's reports are being reprinted by private publishers. They are described in the listings where applicable and can be ordered direct. Most OTA reports are also distributed automatically to approximately 700 Regional Depository Libraries throughout the country and may be included in the Government Documents collection of university and public libraries in your area. Please consult your librarian for additional information.

Ordering Information

To order from GPO:

Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
Telephone (202) 783-3238

Orders must include the title, GPO stock number, and the proper remittance.

To order from NTIS:

National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Telephone (703) 487-4650

Documents can be ordered from NTIS in either paper or microfiche format. Prices listed for NTIS copies refer to paper copies. All NTIS reports purchased in microfiche are $4.50. The order number for both paper copy or microfiche (PB XX-XXX XXX) is the same.

An order blank for GPO and NTIS orders is included in the back of this brochure for your convenience.

To order from OTA Publishing Office **(NOTE: only for those listed as available free from OTA):**

U.S. Congress
Office of Technology Assessment
Publishing Office
Washington, DC 20510
Telephone (202) 224-8996

If you encounter difficulty and need assistance in the purchase or receipt of publications from GPO or NTIS listed in this document, please notify the OTA Publishing Office at the above address.

Energy, Materials, & International Security

ENERGY AND MATERIALS

Federal Coal Leasing Program

Outlines DOI's pre-lease environmental assessment and planning process, describes how that process was implemented in the five Western coal regions, discusses the issues that have been raised with respect to the adequacy of that process and its implementation, and reviews policy options that would allow leasing to proceed in an environmentally compatible manner.

Environmental Protection in the Federal Coal Leasing Program. OTA-E-237, May 1984. In press. Contact OTA Publishing Office for further information.

Nuclear Power in an Age of Uncertainty

Examines the future of nuclear power in this country; describes the current technological, economic, financial, public perception, and regulatory problems facing the domestic nuclear industry; identifies how various changes might affect the industry's future.

Nuclear Power in an Age of Uncertainty. OTA-E-216, February 1984; XII, 293 pages. GPO stock #052-003-00941-2; $10.00.

Summary, Nuclear Power in an Age of Uncertainty. OTA-E-217, 28 pages. Available free from OTA Publishing Office.

Potential U.S. Natural Gas Availability

Evaluates the future prospects for the discovery and production of conventional natural gas in the Lower 48 States and examines the gas resource base and future production potential.

Interim Report—U.S. Natural Gas Availability: Conventional Gas Supply Through the Year 2000—A Technical Memorandum. OTA-TM-E-12, September 1983; viii, 108 pages. GPO stock #052-003-00926-9; $4.75. NTIS order #PB 84-114 909; $13.00.

Industrial Energy Use

Examines energy use in the industrial sector in general and in the largest energy-using industries—pulp and paper, petroleum refining, chemicals, and steel.

Industrial Energy Use. OTA-E-198, June 1983; xii, 174 pages. GPO stock #052-003-00915-3; $6.00. NTIS order #83-240 606; $17.50.

Summary, Industrial Energy Use. OTA-E-199, June 1983; 28 pages. Available free from OTA Publishing Office.

Industrial and Commercial Cogeneration

Examines the role that cogenerators could play in providing electric and thermal energy for industrial and commercial facilities; reviews the economic, environmental, social, and institutional consequences of cogeneration; and analyzes policy options that Congress may wish to consider.

Industrial and Commercial Cogeneration. OTA-E-192, February 1983; vii, 299 pages. NTIS order #PB 83-180 547; $25.00.

Summary, Industrial and Commercial Cogeneration. OTA-E-193, February 1983; 28 pages. Available free from OTA Publishing Office.

Increased Automobile Fuel Efficiency and Synthetic Fuels

Assesses and compares increased automobile fuel efficiency and synthetic fuels production with respect to their potential to reduce conventional oil consumption, and their costs and impacts.

Increased Automobile Fuel Efficiency and Synthetic Fuels: Alternatives for Reducing Oil Imports. OTA-E-185, September 1982; ix, 293 pages. GPO stock #052-003-00889-1; $8.50. NTIS order #PB 83-126 094; $23.50.

Summary, Increased Automobile Fuel Efficiency and Synthetic Fuels: Alternatives for Reducing Oil Imports. OTA-E-186, September 1982; 39 pages. Available free from OTA Publishing Office.

Background Paper #1: Synthetic Fuels for Transportation: The Future Potential of Electric and Hybrid Vehicles. OTA-BP-E-13, March 1982; xii, 219 pages. GPO stock #052-003-00862-9; $7.00. NTIS order #PB 83-126 086; $20.50.

Background Paper #2: Selected Technical and Economic Comparisons of Synfuel Options. October 1982; ix, 236 pages. NTIS order #PB 83-147 363; $22.00.

Background Paper #3: Environmental Issues of Synthetic Transportation Fuels From Coal. November 1982; v, 101 pages. NTIS order #PB 83-161 851; $13.00.

Background Paper #4: Environmental Issues of Synthetic Transportation Fuels From Coal. December 1982; viii, 198 pages. NTIS order # PB 83-161 919; $25.00.

Background Paper #5: Water Availability for Synthetic Fuels: An Assessment of Current Studies. October 1982; viii, 141 pages. NTIS order #PB 83-152 645; $16.00.

Energy Efficiency of Buildings in Cities

Focuses on the interaction of technology and policy for new and existing residential and commercial buildings in U.S. cities for the next two decades.

The Energy Efficiency of Buildings in Cities. OTA-E-168, March 1982; vii, 361 pages. GPO stock #052-003-00871-8; $9.00. NTIS order #PB 82-200 346; $27.00.

Summary: The Energy Efficiency of Buildings in Cities. OTA-E-169, March 1982; 27 pages. Available free from OTA Publishing Office.

Volume II, Working Papers: The Energy Efficiency of Buildings in Cities. December 1982. Contains two papers: #1) Fostering Equity in Urban Conservation: Utility Metering and Utility Financing, and #2) Case Studies of Building Energy Efficiency in Five U.S. Cities. 224 pages. NTIS order #PB 83-264 564; $19.50.

Volume III, Working Papers: The Energy Efficiency of Buildings in Cities. December 1982. Contains two papers: #3) Financial Analysis of Six Prototypical Apartment Buildings: Background Information and Assumptions, and #4) Methods and Detailed Calculations Used in Estimating the Retrofit Potential of Different Building Types. 258 pages. NTIS order #PB 83-171 710; $20.50.

Solar Power Satellite Systems

Identifies and analyzes the key issues that need resolution before decisions whether or not to develop major solar power satellite systems can be made.

Solar Power Satellite Systems and Issues. OTA-E-144, August 1981; viii, 298 pages. GPO stock #052-003-00848-3; $8.50. NTIS order #PB 82-108 846; $22.50.

Summary, Solar Power Satellite Systems and Issues. OTA-E-145, August 1981; 24 pages. Available free from OTA Publishing Office.

Nuclear Powerplant Standardization

Provides the essential background material for a broad understanding of the nuclear industry, its institutions and their relationship to standardization to improve both safety and licensability.

Nuclear Powerplant Standardization: Light Water Reactors. OTA-E-134, April 1981; ix, 63 pages. NTIS order #PB 81-213 589; $9.00.

Volume II: Appendixes, Nuclear Powerplant Standardization: Light Water Reactors, Parts A and B. Contents: Current State of Standardization; Application of the Principles of the Naval Reactors Program to Commercial Reactors; The NRC and Standardization; Impacts of Nuclear Powerplant Standardization on Public Health and Safety; Descriptions of Current Control Room Designs and Duke Power's Letter; Admiral Rickover's Testimony; History of Standardization in the NRC; Details on the Impact of Standardization on Public Health and Safety. June 1981; 436 pages. NTIS order #PB 81-240 897; $31.50.

World Petroleum Availability

Examines prospects for world oil supplies and production in coming decades. Analyzes country-by-country supply prospects and the potential for new discoveries, and estimates what these countries will actually produce.

World Petroleum Availability: 1980-2000—A Technical Memorandum. OTA-TM-E-5, October 1980; vii, 88 pages. GPO stock #052-003-00781-9; $4.75. NTIS order #PB 81-145 252; $10.50. Also available in paperback for $10.00 from McGraw-Hill, Energy Information Services, Rm. 4249, 1221 Avenue of the Americas, New York, N.Y. 10020.

Biomass

Evaluates the energy potential of plant and animal matter (biomass), concentrating on four biomass fuel cycles—wood, alcohol fuels,

grasses and crop residues, and animal wastes. Describes biomass' place in two plausible energy futures and discusses policy options.

Energy From Biological Processes. OTA-E-124, July 1980; x, 195 pages. GPO stock #052-003-00762-2; $7.00. NTIS order #PB 80-211 477; $18.00. Also available in hardback for $24.00 under the title "Energy From Biological Processes: Technical and Policy Options" from Westview Press, Sales Dept., 5500 Central Ave., Boulder, Colo. 80301.

Summary, Energy From Biological Processes. OTA-E-123, July 1980; 23 pages. Available free from OTA Publishing Office.

Volume II: Technical and Environmental Analyses, Energy From Biological Processes. Presents the technical and environmental analyses of the resource base, conversion technologies, and end uses on which the conclusions in volume I are based. OTA-E-128, September 1980; vii, 234 pages. GPO stock #052-003-00782-7; $7.50. NTIS order #PB 81-134 769; $19.50. Also available in hardback for $26.50 from Ballinger Publishing Co., 17 Dunster St., Harvard Square, Cambridge, MA 02138. Also available in paperback for $18.00 from McGraw-Hill, Energy Information Services, Rm. 4249, 1221 Avenue of the Americas, New York, N.Y. 10020.

Volume III: Appendixes, Energy From Biological Processes—Parts A through C. Available from NTIS:

Part A: Energy From Wood. Contents: Background; Supply; Recovery Technology; Economics; Environmental Impacts; Incentives and Disincentives. 1981; 161 pages. NTIS order #PB 81-134 777; $28.50.

Part B: Agriculture, Unconventional Crops, and Selected Biomass Wastes. Contents: The Potential of Producing Energy From Agriculture; Cropland Availability for Biomass Production; Energy From Agriculture: Unconventional Crops; Energy From Aquaculture Biomass System: Fresh and Brackish Water Aquatic Plants; Energy From Agriculture: Animal Wastes; Energy From Agriculture: Agriculture Processing Wastes. 1981; 728 pages. NTIS order #PB 81-134 785; $58.00.

Part C: Select Conversion Technologies and End Use. Contents: End Use of Fluids From Biomass as Energy Resources in Both Transportation and Nontransportation Sectors, Thermochemical Conversion of Biomass: The Scientific Aspects; Engineering Aspects of Thermochemical Conversion; Biological Production of Gas. 1981; 321 pages. NTIS order #PB 81-134 793; $49.00.

DOE Conservation and Solar Programs

Analyzes the progress and direction of five major conservation and solar energy programs of the U.S. Department of Energy to provide an overview of their balance and long-range potential, and whether they reflect administration and congressional goals.

Conservation and Solar Energy Programs of the Department of Energy—A Critique. OTA-E-120, June 1980; vii, 80 pages. GPO stock #052-003-00757-6; $4.75. NTIS order #PB 80-197 759; $10.50.

Liquefied Natural Gas

Evaluates projected U.S. demand, global availability, cost and financing, and security of foreign supplies.

The Future of Liquefied Natural Gas Imports. OTA-E-110, March 1980; xii, 126 pages. GPO stock #052-003-00743-6; $6.00. NTIS order #PB 80-173 552; $13.50.

Gasohol

Discusses the technology and economics of gasohol production, and examines the environmental, social, and institutional impacts of its use as a transportation fuel.

Gasohol: A Technical Memorandum. OTA-TM-E-1, September 1979; viii, 71 pages. NTIS order #PB 80-105 885; $10.50.

Residential Energy Conservation

Examines the prospects of existing and new technologies for reducing energy consumption in homes, as well as the effectiveness of Federal programs and policies for achieving energy conservation in residences.

Residential Energy Conservation. OTA-E-92, July 1979; vii, 355 pages. GPO stock #052-003-00691-0; $9.00. NTIS order #PB 298 410; $27.00. Also available in hardback for $15.00 under the title "Energy Conservation Techniques for Homes and Other Structures" from Allanheld, Osmun & Co., 81 Adams Dr., Totowa, N.J. 07512.

Volume II: Working Papers, Residential Energy Conservation. OTA-E-87, April 1979; vii, 615 pages. Contains two papers: #1) Low-Income Consumer's Energy Problems and the Federal Government's Response: A Discussion Paper, and #2) Description and Evaluation of New Residential Energy Efficiency Technologies. NTIS order #PB 80-162 829; $43.50.

The Direct Use of Coal

Assesses the prospects as well as the environmental, health, safety, and other problems of mining and burning significantly more coal than now. Also examines the complete coal system from extraction to combustion, including the key steps and institutions that policy can influence.

The Direct Use of Coal: Prospects and Problems of Production and Combustion. OTA-E-86, April 1979; vi, 411 pages. GPO stock #052-003-00664-2; $10.00. NTIS order #PB 295 797; $31.50. Also available in hardback for $29.50 from Ballinger Publishing Co., 17 Dunster St., Harvard Square, Cambridge, Mass. 02138.

Volume II, Working Papers: The Direct Use of Coal—Parts A through D. Available from NTIS:

Part A. Contents: Selected Topics in Estimating Future Energy Demand and Supply; Rethinking the Scale of Coal-Fired Electric Generation; Residential and Commercial Uses of Coal; Coal Cleaning and Desulfurization; Miners and Operators Collective Bargaining in Coal. April 1979; 586 pages. NTIS order #PB 80-184 518; $39.00.

Part B. Contents. Environmental Considerations for Increased Coal Utilization; Transport and Fate of Sulfur and Other Air Pollutants; Prediction and Review of Air Pollution Health Effects From Direct Coal Combustion. April 1979; 594 pages. NTIS order #PB 80-184 526; $42.00.

Part C. Contents: Effects on Plants of Sulfur Pollutants From Coal Combustion; Coal Mine Health; Social and Economic Impacts of Coal Production in the Eastern U.S.; Impacts of Coal Development on Western Communities; Public Attitudes Toward Coal-Fired Powerplants. April 1979; 534 pages. NTIS order #PB 80-184 534; $37.50.

Part D. Contents: Federal Coal Leasing Policy; Laws Applicable to Air Emissions From Direct Use of Coal; Surface Mining Control and Reclamation Act of 1977. April 1979; 420 pages. NTIS order #PB 80-184 542; $30.00.

Onsite Solar Energy

Evaluates the economic, technical, and environmental impacts of solar energy systems located at the point of use. Also discusses legal and regulatory concerns, various technologies, energy storage problems, and alternative Federal policies for supporting the development of onsite solar technology.

Volume I: Application of Solar Technology to Today's Energy Needs. OTA-E-66, June 1978; vii, 525 pages. GPO stock #052-003-00539-5; $11.00. NTIS order #PB 283 770; $36.00.

Volume II: Application of Solar Technology to Today's Energy Needs. Describes the vast array of systems for providing onsite solar energy as well as the methodology for evaluating the economic and technical merits of those systems. OTA-E-77, September 1978; vii, 764 pages. GPO stock #052-003-00608-1; $12.00. NTIS order #PB 289 762; $52.00.

Coal Slurry Pipelines

Compares the cost of transporting coal by slurry pipelines to rail for certain routes, and assesses the impact of the proposed pipelines on the railroad industry as well as on water supplies in the Western United States.

A Technology Assessment of Coal Slurry Pipelines. OTA-E-60, March 1978; xv, 155 pages. GPO stock #052-003-00523-9; $6.50. NTIS order #PB 278 675; $15.00.

Summary, A Technology Assessment of Coal Slurry Pipelines. OTA-E-127, September 1980; 27 pages. Available free from OTA Publishing Office.

Volume II, Task Reports: Coal Slurry Pipelines—Parts 1 and 2. Available from NTIS.

Part 1. Contains two reports on the market for coal transportation and on economic considerations. January 1978; 530 pages. NTIS order #PB 278 676; $36.50.

Part 2. Includes the results of an environmental study and an investigation of legal and regulatory issues. January 1978; 750 pages. NTIS order #PB 278 677; $55.00.

Enhanced Oil Recovery

Assesses the potential for increasing domestic production of oil by applying developing technologies to known reservoirs.

Enhanced Oil Recovery Potential in the United States. OTA-E-59, January 1978; xii, 238 pages. NTIS order #PB 276 594; $19.50. Also available in paperback for $18.00 from McGraw-Hill, Energy Informational Services, Rm. 4249, 1221 Avenue of the Americas, New York, N.Y. 10020.

Devonian Shale Gas

Analyzes the potential for producing gas from Devonian shales of the Appalachian Basin using existing technologies under a variety of economic assumptions.

Gas Potential From Devonian Shales of the Appalachian Basin. OTA-E-57, November 1977; xii, 81 pages. NTIS order #PB 274 856; $10.50.

Nuclear Proliferation

Examines several nuclear power fuel cycles and ancillary enrichment and reprocessing technologies for their impact on the risks of the proliferation of nuclear weapons to nations or other groups that do not now possess them.

Nuclear Proliferation and Safeguards. OTA-E-48, June 1977; xiii, 270 pages. Available from Praeger Publishing Co., New York, N.Y. Please direct all purchase orders to Holt, Rinehart and Winston, 383 Madison Avenue, New York, N.Y. 10017, $21.50, hardbound. NTIS order #PB 275 843; $21.00.

Summary, Nuclear Proliferation and Safeguards. OTA-E-148, March 1982; 47 pages. Available free from OTA Publishing Office.

Volume II, Appendix: Nuclear Proliferation and Safeguards—Parts One and Two. Two-part volume containing background data for OTA's assessment report on Nuclear Proliferation and Safeguards. OTA-E-50, June 1977; vii, 1,051 pages. Vol. II, Part I: NTIS order #PB 275 844; $40.50. Vol. II, Part 2: NTIS order #PB 275 845; $39.00.

INDUSTRY, TECHNOLOGY, AND EMPLOYMENT

Wood Use: U.S. Competitiveness and Technology

Surveys the contribution of the forest products industry to the U.S. economy; the ability of the industry and the U.S. forest resource to satisfy expected domestic demands for wood; the competitiveness of U.S. forest products in world markets; and the role of technology in stretching the U.S. forest resource and providing products that satisfy domestic needs as well as international markets.

Wood Use: U.S. Competitiveness and Technology. OTA-ITE-210, August 1983; ix, 202 pages. GPO stock #052-003-00921-8; $6.00. NTIS order #PB 84-109 925; $19.00.

Summary, Wood Use: U.S. Competitiveness and Technology. OTA-ITE-211, August 1983; 28 pages. Available free from OTA Publishing Office.

Volume II: Technical Report. In press. OTA-ITE-224. Contact OTA Publishing Office for further information.

Hazardous Waste Control

Assesses the criteria for defining hazardous waste and for judging the relative health and environmental hazards of a given waste; evaluates technologies for cleaning up present waste disposal sites that are hazardous to health and the environment; assesses technologies and approaches for the safe storage or disposal of hazardous waste; and examines technologies and approaches for reducing the volume of hazardous waste.

Technologies and Management Strategies for Hazardous Waste Control. OTA-M-196, March 1983; viii, 407 pages. GPO stock #052-003-00901-3; $8.50. NTIS order #PB 83-189 241; $31.00.

Summary, Technologies and Management Strategies for Hazardous Waste Control. OTA-M-197, March 1983; 55 pages. Available free from OTA Publishing Office.

Volume II, Working Papers: Technologies and Management Strategies for Hazardous Waste Control. Available from NTIS:

Part A: Hazardous Waste Categories: A Review of Literature and Past Research Effort. April 1983. NTIS order #PB 83-239 939; $28.00.

Part B: Application of Biotechnology to Hazardous Waste Disposal. April 1983. NTIS order #PB 83-239 947; $16.00.

Part C: Classification by Degree of Hazard for Selected Industrial Waste Streams. April 1983. NTIS order #PB 83-239 954; $20.50.

Part D: Alternatives for Reducing Hazardous Waste Generation Using End-Product Substitution. April 1983. NTIS order #PB 83-239 962; $26.50.

Habitability of the Love Canal Area: An Analysis of the Technical Basis For the Decision on the Habitability of the Emergency Declaration Area—A Technical Memorandum. OTA-TM-M-13, June 1983; vii, 58 pages. GPO stock #052-003-00917-0; $4.00. NTIS order #PB 84-114 917; $10.00.

Nonnuclear Industrial Wastes: Classifying for Hazards Management—A Technical Memorandum. OTA-TM-M-9, November 1981; vii, 36 pages. GPO stock #052-003-00859-9; $3.00. NTIS order #PB 82-134 305; $7.50.

Development and Production Potential of Federal Coal Leases

Analyzes all mining activities on Federal leases, examines the present and development potential value of outstanding leases, estimates revenues to the Federal Government, and the feasibility of using deep-mining technology in leased areas.

An Assessment of Development and Production Potential of Federal Coal Leases. OTA-M-150, December 1981; ix, 473 pages. GPO stock #052-003-00851-3; $10.00. NTIS order #PB 82-149 378; $34.50.

Summary, An Assessment of Development and Production Potential of Federal Coal Leases. OTA-M-151, November 1981; 44 pages. Available free from OTA Publishing Office.

Volume II, Working Papers: An Assessment of Development Production Potential of Federal Coal Leases, Parts B, C, D, F, G, H. Available from NTIS.

Part B: The Development Prospects for Federal Coal Leases in New Mexico, 1980-90. October 1982; 93 pages. NTIS order #PB 83-180 901; $13.00.

Part C: Development and Production Potential of Existing Federal Coal Leases in the Fort Union Region of North Dakota and Montana. October 1982; 178 pages. NTIS order #PB 83-180 919; $17.50.

Part D: Review of Undeveloped Federal Coal Leases in Utah. October 1982; 198 pages. NTIS order #PB 83-180 927; $20.50.

Part F: A Review of Current Production and Anticipated Future Production on Federal Mines and Selected Undeveloped Lease Blocks in Montana and Wyoming. October 1982; 316 pages. NTIS order #PB 83-180 935; $25.00.

Part G: Federal Coal Preference Right Lease Applications: Their History, Ownership, and Current Status. October 1982; 86 pages. NTIS order #PB 83-180 943; $11.50.

Part H: Criteria for Determining Viable Mining Properties on Existing Federal Coal Leases in the Western United States. October 1982; NTIS order #PB 83-180 950; $16.00.

Federal Coal Lease Ownership

Traces the history of the 538 Federal coal leases in existence at the end of 1979, and identifies the participants in the Federal coal leasing program between 1950 and 1980.

Patterns and Trends in Federal Coal Lease Ownership, 1950-80—A Technical Memorandum. OTA-TM-M-7, March 1981; vi, 76 pages. NTIS order #PB 81-188 484; $10.50.

Technology and Steel Industry Competitiveness

Assesses how and when new technology can improve the international competitiveness of the U.S. steel industry; examines the governmental and industrial barriers to creating and adopting technological innovations.

Technology and Steel Industry Competitiveness. OTA-M-122, June 1980; vii, 374 pages. GPO stock #052-003-00760-6; $9.50. NTIS order #PB 80-208 200; $28.50.

Summary, Technology and Steel Industry Competitiveness. OTA-M-121, June 1980; 28 pages. Available free from OTA Publishing Office.

Oil Shale Technologies

Assesses the status and potential of technologies for the development of oil shale resources, including environmental and socioeconomic impacts, water demand and availability, and institutional and financial considerations. Includes a history and analysis of the Federal Prototype Oil Shale Leasing Program.

An Assessment of Oil Shale Technologies. OTA-M-118, June 1980; vii, 518 pages. NTIS order #PB 80-210 115; $36.00. Also available in paperback for $22.00 from McGraw-Hill, Energy Informational Services, Rm. 4249, 1221 Avenue of the Americas, New York, N.Y. 10020.

Summary, An Assessment of Oil Shale Technologies. OTA-M-117, June 1980; 31 pages. Available free from OTA Publishing Office.

Volume II: A History and Analysis of the Federal Prototype Oil Shale Leasing Programs. OTA-M-119, July 1980; viii, 81 pages. NTIS order #PB 80-210 123; $10.50.

Continuous Casting in the U.S. Steel Industry

Describes the continuous casting process, contrasts the rate of its adoption by U.S. and foreign steel industries, and examines the economic costs and benefits of accelerated conversion to this new technology.

Benefits of Increased Use of Continuous Casting by the U.S. Steel Industry—A Technical Memorandum. OTA-TM-ISC-2, October 1979; vii, 32 pages. NTIS order #PB 80-104 904; $7.50.

Conservation of Metals

Explores the kinds and amounts of waste that occur in U.S. use of eight critical metals and the technical options for reducing that waste.

Technical Options for Conservation of Metals: Case Studies of Selected Metals and Products. OTA-M-97, September 1979; x, 125 pages. NTIS order #PB 80-102 619; $13.50.

Volume II, Working Papers, Conservation of Metals—Parts II-A through II-F. Available from NTIS:

Part A: A Preliminary Assessment of Options for Reducing Wastage of Materials. 125 pages. NTIS order #PB 80-170 343; $12.00.

34-604 O - 84 - 3

Part B: Flows of Selected Materials, 1974. 211 pages. NTIS order #PB 80-170 350; $18.00.

Part C: Identification and Evaluation of Metal Conservation Approaches for Products. 278 pages. NTIS order #PB 80-110 935; $22.50.

Part D: Alternative Methods for Implementing a Recycling Policy. 69 pages. NTIS order #PB 80-110 943; $9.00.

Part E: Analysis of the Impacts of Changing Product Service Life and Material Content. 157 pages. NTIS order #PB 80-110 950; $15.00.

Part F: Preliminary Technology Assessment of Materials Conservation Strategies. 231 pages. NTIS order #PB 80-110 968; $19.50.

Materials and Energy From Municipal Waste

Examines present and potential technologies for producing energy and recovering resources from municipal solid waste, and assesses the economic and institutional impacts of an expanded program of recycling and reuse.

Materials and Energy From Municipal Waste: Resource Recovery and Recycling From Municipal Solid Waste and Beverage Container Deposit Legislation. OTA-M-93, July 1979; viii, 284 pages. GPO stock #052-003-00692-8; $8.00. NTIS order #PB 300 849; $22.50.

Volume II, Working Papers: Materials and Energy From Municipal Waste—Resource Recovery and Recycling From Municipal Solid Waste and Beverage Container Deposit Legislation. OTA-M-69, July 1978; ix, 524 pages. NTIS order #PB 300 848; $37.50.

Management of Minerals in Federal Lands

Analyzes Federal laws and practices that govern the exploration, development, and production of fuel and nonfuel minerals in onshore Federal lands.

Management of Fuel and Nonfuel Minerals in Federal Lands. OTA-M-88, April 1979; x, 435 pages. GPO stock #052-003-00667-7; $11.00. NTIS order #PB 295 788; $31.50.

Access Across Federal Lands

Analyzes laws, regulations, and policies affecting access across federally owned lands to minerals on non-Federal lands, with special emphasis on Alaska.

Analysis of Laws Governing Access Across Federal Lands: Options for Access in Alaska. OTA-M-82, February 1979; xi, 260 pages. NTIS order #PB 293 982; $21.00.

Volume II, Working Papers: Analysis of Laws Governing Access Across Federal Lands—Options for Access in Alaska. OTA-M-76, September 1978; vii, 315 pages. NTIS order #PB 296 558; $24.00.

Chronic Materials Scarcity

Consists of the proceedings of a conference on national materials policy conducted by the Federation of Materials Societies from August 8-13, 1976, at Henniker, N.H. The conference examined the interrelationship of engineering and the policy implications of potential scarcities of various materials.

Engineering Implications of Chronic Materials Scarcity. OTA-M-44, April 1977; ix, 320 pages. NTIS order #PB 273 193; $25.50.

Materials Information Systems

Analyzes the ability of existing information systems, relied on by Government and business policymakers for data on the supply and demand for materials, to help avert future shortages and solve other materials-related problems.

An Assessment of Information System Capabilities Required To Support U.S. Materials Policy Decisions. OTA-M-40, December 1976; xv, 249 pages. NTIS order #PB 273 462; $19.50.

Alternative Stockpiling Policies

Assesses the social, political, and economic impacts of six alternative policies for stockpiling materials for purposes other than national security; for use, for example, in the event of sudden and unexpected shortages.

An Assessment of Alternative Economic Stockpiling Policies. OTA-M-36, August 1976; xiii, 327 pages. NTIS order #PB 273 191; $24.00.

INTERNATIONAL SECURITY & COMMERCE

Arms Control in Space

Summary of findings and proceedings of 6 workshop sessions held by OTA in Washington, D.C. on January 30 and 31, 1984 to explore and examine antisatellite (ASAT) weapons as one aspect of space arms control.

Arms Control in Space—Workshop Proceedings. OTA-BP-ISC-28, May 1984; vi, 68 pages. GPO stock #052-003-00952-8; $3.00.

Directed Energy Missile Defense in Space

Describes and assesses current concepts for directed-energy ballistic missile defense in space.

Directed Energy Missile Defense in Space-Background Paper. OTA-BP-ISC-26. April 1984; v, 98 pages. GPO stock #052-003-003-00948-0; $4.50.

Technology Transfer to the Middle East

Assesses international competition in Middle East technology trade during the past decade, with special attention to transfer of five types of advanced civilian technology; analyzes technology absorption by the recipients in the Islamic Middle East, and the benefits and problems associated with technology transfer for both the recipients and suppliers of technoiogy; includes an analysis of future prospects for technology trade.

Technology Transfer to the Middle East. OTA-ISC-173. In press. Contact OTA Publishing Office for further information.

Summary-Technology Transfer to the Middle East. OTA-ISC-174. In press. Available free from OTA Publishing Office.

Remote Sensing and the Private Sector

This technical memorandum, which constitutes a portion of a major assessment of international cooperation and competition in civilian space activities, is designed to help determine the appropriate requirements and conditions for private sector ownership of the U.S. land remote-sensing system.

Remote Sensing and the Private Sector: Issues for Discussion—A Technical Memorandum. OTA-TM-ISC-20, March 1984; vii, 141 pages. GPO stock #052-003-00945-5; $6.00. NTIS order #PB 84-180 777; $14.50.

International Competitiveness in Electronics

Examines those factors contributing to the international competitiveness of the U.S. electronics industry, emphasizing those factors that could most readily be affected by U.S. Government policy.

International Competitiveness in Electronics. OTA-ISC-200, November 1983; vii, 546 pages. GPO stock #052-003-00933-1; $17.00. NTIS order #PB 84-170 695; $38.50.

Summary, International Competitiveness in Electronics. OTA-ISC-201, November 1983; 28 pages. Available free from OTA Publishing Office.

Technology and East-West Trade

Examines the economic, military, and political implications of technology transfer to the Communist world; reviews existing policies and regulations governing this transfer; and discusses the issues and options in increased East-West trade.

Technology and East-West Trade. OTA-ISC-101, November 1979; viii, 303 pages. NTIS order #PB 80-119 381; $22.50. Also available in hardback for $25.00 from Allanheld, Osmun & Co., 81 Adams Dr., Totowa, N.J. 07512.

Reviews events since the publication of Technology and East-West Trade in 1979, and discusses the political, military, and commercial issues arising in congressional debate over the renewal of the Export Administration Act.

Technology and East-West Trade: An Update. OTA-ISC-209, May 1983; vii, 106 pages. GPO stock #052-003-00908-1; $4.75. NTIS order #PB 83-234 955; $13.00.

UNISPACE '82 Conference

Discusses the issues which arose at this conference, and assesses their significance for "international competition and cooperation in civilian space activities." (A full report on this subject will appear later in 1984).

UNISPACE '82: A Context for International Cooperation and Competition—A Technical Memorandum. OTA-TM-ISC-26. March 1983; vii, 85 pages. GPO stock #052-003-00903-3; $5.50. NTIS order #PB 83-201 848; $11.50.

Technology and Soviet Energy Availability

Analyzes and identifies various U.S. and other Western energy technologies that might be of value to the Soviet Union. Examines the impact of their availability on Soviet energy production to 1990 and discusses the policy options available to the Soviets by way of other Warsaw Pact countries, the Western importers of Soviet energy, and the Middle East.

Technology and Soviet Energy Availability. OTA-ISC-153, November 1981; vii, 405 pages. NTIS order #PB 82-133 455; $30.00. Also available in hardback for $25.00 from Westview Press, Inc., 5500 Central Ave., Boulder, Colo. 80301.

Summary, Technology and Soviet Energy Availability. OTA-ISC-154, November 1981; 28 pages. Available free from OTA Publishing Office.

MX Missile Basing

Assesses the technical feasibility, strategic utility, cost, impact on the region, and future consequences of various MPS-basing modes, and of alternative missile-basing modes that merit serious attention.

MX Missile Basing. OTA-ISC-140, September 1981; vii, 335 pages. GPO stock #052-003-00849-1; $9.00. NTIS order #PB 82-108 077; $25.50.

Summary, MX Missile Basing. OTA-ISC-139, June 1981; 52 pages. Available free from OTA Publishing Office.

U.S. Industrial Competitiveness

Compares the international competitiveness of three U.S. industries —steel, electronics, and automobiles—and evaluates the prospects for better integration of policies affecting industries in the United States.

U.S. Industrial Competitiveness—A Comparison of Steel, Electronics, and Automobiles. OTA-ISC-135, July 1981; x, 206 pages. GPO stock #052-003-00814-9; $7.00. NTIS order #PB 81-235 749; $18.00.

Summary, U.S. Industrial Competitiveness—A Comparison of Steel, Electronics, and Automobiles. OTA-ISC-136, July 1981; 28 pages. Available free from OTA Publishing Office.

Taggants in Explosives

Assesses the technical feasibility, safety ramifications, costs, and law enforcement utility of a proposal to require that commercial explosives be manufactured with "identification taggants" (designed to survive an explosion and trace the source of the explosives) and "detection taggants" (designed to allow a suitable machine to sense the presence of explosives inside a suitcase, package, etc.).

Taggants in Explosives. OTA-ISC-116, April 1980; vii, 263 pages. GPO stock #052-003-00747-9; $8.00. NTIS order #PB 80-192 719; $21.00.

Summary, Taggants in Explosives. OTA-ISC-115, April 1980; 31 pages. Available free from OTA Publishing Office.

Effects of Nuclear War

Examines the social, economic, political, and health effects of various levels of nuclear attacks on the United States and the Soviet Union. Also identifies the large areas of uncertainty regarding what those effects would be.

The Effects of Nuclear War. OTA-NS-89, May 1979; vii, 151 pages. GPO stock #052-003-00668-5; $6.50. NTIS order #PB 296 946; $15.00. Also available in hardback for $10.95 from Allanheld, Osmun & Co., 81 Adams Dr., Totowa, N.J. 07512. A somewhat modified version is available in paperback for $7.95 from Cheshire Books (Kampmann & Co., dist., 9 E. 40th St., New York, N.Y. 10016) under the title "The Day After Midnight: The Effects of Nuclear War."

Summary, The Effects of Nuclear War. OTA-ISC-114, April 1980; 27 pages. Available free from OTA Publishing Office.

Limited Nuclear Warfare

Critiques the assumptions made by the Department of Defense concerning the civilian casualties that would result in the United States in the event of a nuclear warfare exchange limited to military targets.

Analysis of Effects of Limited Nuclear Warfare. OTA-3, September 1975; v, 156 pages. Out-of-print. A copy may be inspected at the OTA Information Center, 600 Pennsylvania Avenue, S.E., Washington, D.C.

Health & Life Sciences

BIOLOGICAL APPLICATIONS

Neuroscience

This background paper, which is part of an assessment of Technology and Aging in America, focuses on the status of basic neuroscience research, and investigates not only the current status and potential medical applications, but also includes broad social and ethical issues that might arise from such research.

Impacts of Neuroscience—Background Paper. OTA-BP-BA-24, March 1984; v, 36 pages; GPO stock #052-003-00946-3; $2.50.

Commercial Biotechnology

Describes the state of the art of biotechnology as applied to industries involved in agriculture, and production of pharmaceuticals and chemicals; environmental applications in such areas as mining, pollution control, oil recovery, and toxic waste treatment; and analyzes some factors that will affect commercial development of biotechnology.

Commercial Biotechnology: An International Analysis. OTA-BA-218, January 1984; viii, 613 pages. GPO stock #052-003-00939-1; $20.00. NTIS order #PB 84-173 608; $43.00.

Summary, Commercial Biotechnology: An International Analysis. OTA-BA-219, January 1984; 28 pages. Available free from the OTA Publishing Office.

Genetic Testing

Examines questions on the technological state of the art; claimed associations between certain genetic characteristics and increased risk of harm from certain chemicals; protection to workers from discriminatory practices that is provided by existing law; and ethics and economics of genetic testing.

The Role of Genetic Testing in the Prevention of Occupational Disease. OTA-BA-194, April 1983; x, 243 pages. GPO stock #052-003-00906-4; $6.50. NTIS order #PB 83-233 734; $20.50.

Summary, The Role of Genetic Testing in the Prevention of Occupational Disease. OTA-BA-195, April 1983; 27 pages. Available free from OTA Publishing Office.

World Population and Fertility Planning Technology

Addresses issues of how Government policies and programs view planned birth technologies, and how international population assistance has changed world population growth in the last 20 years.

Assesses present and prospective birth technologies and factors determining their future development and use.

World Population and Fertility Planning Technologies: The Next 20 Years. OTA-HR-157, February 1982; xiii, 243 pages. GPO stock #052-003-00867-0; $7.50. NTIS order #PB 82-200 338; $21.00.

Summary, World Population and Fertility Planning Technologies: The Next 20 Years. OTA-HR-158, February 1982; 27 pages. Available free from OTA Publishing Office.

Volume II: Working Papers—Parts A-E. Contents: Prospects for New or Improved Birth Control Technologies by the Year 2000 AD; Factors Influencing the Demand for Children and Their Relationship to Contraceptive Use; Factors That Determine the Appropriateness of New Technologies to Consumer Needs; Future Prospects for the Development of Birth Planning Technologies: What the Experts Think; The Impacts of Population Growth on Less Developed Countries; Projections for Countries and Regions. June 1982; 545 pages. NTIS order #PB 82-253 428; $37.50.

Impacts of Applied Genetics

Examines the application of classical and molecular genetic technologies to micro-organisms, plants, and animals. Current developments are especially rapid in the application of genetic technologies to micro-organisms; these are studied in three industries: pharmaceutical, chemical, and food.

Impacts of Applied Genetics: Micro-Organisms, Plants, and Animals. OTA-HR-132, April 1981; xii, 331 pages. GPO stock #052-003-00805-0; $9.00. NTIS order #PB 81-206 609; $25.50. Also available in hardback for $25.00 under the title "Genetic Technologies: A New Frontier" from Westview Press, Sales Department, 5500 Central Ave., Boulder, Colo. 80301.

Summary, Impacts of Applied Genetics: Micro-Organisms, Plants, and Animals. OTA-HR-133, April 1981; 28 pages. Available free from OTA Publishing Office.

Volume II: Appendixes—Parts A & B. Contents: Implications of Molecular Genetics for Medicine; Past, Present, and Future Trends in Crop Breeding. July 1981; 636 pages. NTIS order #PB 82-101 536; $44.50.

FOOD & RENEWABLE RESOURCES

Technology, Renewable Resources, and American Crafts

Summarizes technology's effects on crafts (some of which are folk and fine art) that use renewable resources as raw materials.

Technology, Renewable Resources, and American Crafts—Background Paper. OTA-BP-F-27, April 1984, x, 58 pages. Contact OTA Publishing Office for further information.

Sustaining Tropical Forest Resources

Examines the importance of tropical forests to the United States and the world, reviews the rates and causes of deforestation and forest degradation, and assesses how U.S. technology could help alleviate this resource problem.

Technologies To Sustain Tropical Forest Resources. OTA-F-214, March 1984; vii, 352 pages. GPO stock #052-003-00943-9; $10.00.

Summary, Technologies To Sustain Tropical Forest Resources. OTA-F-215, March 1984; 36 pages. Available free from OTA Publishing Office.

Sustaining Tropical Forest Resources: Reforestation of Degraded Lands—Background Paper #1. OTA-BP-F-18, May 1983; vii, 55 pages. GPO stock #052-003-00909-9; $4.50. NTIS order #PB 84-104 041; $10.00.

Sustaining Tropical Forest Resources: U.S. and International Institutions—Background Paper #2. OTA-BP-F-19, May 1983; vii, 65 pages. GPO stock #052-003-00910-2; $4.50. NTIS order #PB 84-104 058; $10.00.

Water and Agriculture in U.S. Arid/Semiarid Lands

Assesses existing and emerging water-related technologies for their ability to support long-term productivity of arid/semiarid agricultural plants and animals in the context of institutional factors, water supply/use relationships, and the characteristics of the renewable natural resource base on which agriculture depends.

Water-Related Technologies for Sustainable Agriculture in U.S. Arid/Semiarid Lands. OTA-F-212, October 1983; viii, 412 pages. GPO stock #052-003-00930-7; $8.50. NTIS order #PB 84-172 667; $31.00.

Summary, Water-Related Technologies for Sustainable Agriculture in U.S. Arid/Semiarid Lands. OTA-F-213, October 1983; 28 pages. Available free from OTA Publishing Office.

Water-Related Technologies for Sustainable Agriculture in Arid/Semiarid Lands: Selected Foreign Experience—A Background Paper. OTA-BP-F-20. May 1983; viii, 82 pages. GPO stock #052-003-00911-1; $4.50. NTIS order #PB 84-102 912; $11.50.

Plants: The Potentials for Extracting Protein, Medicines, and Other Useful Chemicals

Identifies technological opportunities and constraints for commercially developing protein, pharmaceuticals, chemicals, and other associated extracts from plants.

Workshop Proceedings on Plants: The Potentials for Extracting Protein, Medicines, and Other Useful Chemicals. OTA-BP-F-23, September 1983; viii, 252 pages. GPO stock #052-003-00929-3; $6.50. NTIS order # PB 84-114 743; $22.00.

U.S. Cropland and Rangeland Productivity

Assesses the effects of currently used technologies on the capacity of the cropland and rangeland resource base to sustain high levels

34-604 O - 84 - 4

of production. Evaluates emerging technologies that might be used to reverse adverse effects of some of the established technologies.

Impacts of Technology on U.S. Cropland and Rangeland Productivity. OTA-F-166, August 1982; vii, 266 pages. GPO stock #052-003-00884-0; $8.00. NTIS order #PB 83-125 013; $22.00.

Summary, Impacts of Technology on U.S. Cropland and Rangeland Productivity. OTA-F-167, August 1982; 28 pages. Available free from OTA Publishing Office.

Volume II, Background Papers: Impacts of Technology on U.S. Cropland and Rangeland Productivity—Parts A-F. Available from NTIS.

Part A. Contents: How Agricultural Technologies Affect Productivity of Croplands and Rangelands by Affecting Microbial Activity in Soil; Impacts of Technologies on Range Productivity in the Mountain, Intermountain, and Pacific Northwest States; Livestock Grazing on the Forested Lands of the Eastern United States; Influences of Commodity Programs on Long-Term Land Productivity (Conservation); Problems of Cost-Sharing Programs for Long-Term Conservation: The Example of the Agricultural Conservation Program; Impacts of Rangeland Technologies and of Grazing on Productivity of Riparian Environments in U.S. Rangelands; Data Base Assessment of Effects of Agricultural Technology on Soil Macrofauna and the Resultant Faunal Impact on Crop and Range Productivity. December 1982; 316 pages. NTIS order #PB 83-175 083; $25.00.

Part B. Contents: Impacts of Technologies on Productivity and Quality of Southwestern Rangelands; Technology Issues in Developing Sustained Agricultural Productivity of Alaskan Virgin Lands; Impact of Communications Technology on Productivity of Land; Land Use Planning Technologies Applied to Croplands and Rangelands; Sustained Land Productivity: Equity Consequences of Technological Alternatives; Multiple Cropping Systems: A Basis for Developing an Alternative Agriculture. December 1982; 324 pages. NTIS order #PB 83-175 091; $26.50.

Part C. Contents: Description and Evaluation of Pesticidal Effects on the Productivity of the Croplands and Rangelands of the United States; New Roots for American Agriculture; An Overview of Major Legal and Policy Issues Related to the Impact of Technology on the Productivity of the Land; Relationships Between Land Tenure and Soil Conservation; Data Base on Ground Water Quality and Availability: Effects on Productivity of U.S. Croplands and Rangelands. December 1982; 294 pages. NTIS order #PB 83-175 109; $23.50.

Part D. Contents: Impacts of Technologies on Productivity and Quality of Rangelands in the Great Plains Region. December 1982; 314 pages. NTIS order #PB 83-175 117; $26.50.

Part E. Contents: The Impacts of Grazing and Rangeland Management Technology Upon Wildlife; A Review of Current Water Erosion Control Technologies, Including Potential Changes To Enhance Their Effectiveness; Technology Issues in Developing Sustained Agricultural Productivity on Virgin and Abandoned Lands in the United States; The Effects of Long-Term Fertilizer Use on Soil Productivity; The Data Base for Assessment of the Impacts of Technologies on Productivity of Rangeland Resources; Impacts of Technol-

ogy on Cropland and Rangeland Productivity: Managerial Capacity of Farmers; Data Availability for the Assessment of Technologies and Public Policies Relating to Agricultural Productivity. December 1982; 381 pages. NTIS order #PB 83-175 125; $29.50.

Part F. Contents: The Adoption and Diffusion of Technological Innovations in U.S. Agriculture; Credit and Credit Institutions as Factors Affecting the Long-Term Productivity of U.S. Rangelands and Croplands; Emerging Innovative Technologies for Rangeland; Effect of Erosion and Other Physical Processes on Productivity of U.S. Croplands and Rangelands; Changes in the Capacity of Croplands and Rangelands To Sustain Productivity of Environmental Services. Ground Water and Agricultural Productivity: The Information and Data Base; Productivity of Soil as Related to Chemical Changes; Wind Erosion and Control Technology; California Annual Grasslands. December 1982; 359 pages. NTIS order #PB 83-175 133; $28.00.

U.S. Food and Agricultural Research

Analyzes the scientific base for establishing national, regional, and local research problems and the role of Federal, State, and private institutions in solving these problems. Evaluates methods in identifying priority research areas, the adequacy of present basic and applied research efforts, and public policy options.

An Assessment of the United States Food and Agricultural Research System. OTA-F-155, December 1981; viii, 212 pages. GPO stock #052-003-00860-2; $7.00. NTIS order #PB 82-170 572; $18.00.

Summary, An Assessment of the United States Food and Agricultural Research System. OTA-F-156, December 1981; 32 pages. Available free from OTA Publishing Office.

Volume II, Commissioned Papers: An Assessment of the United States Food and Agricultural Research System—Parts A-C. Available from NTIS.

Parts A and B. Contents: Management of Food and Agricultural Research; Determination of Food and Agricultural Research Priorities. April 1982; 316 pages. NTIS order #PB 82-257 783; $25.00.

Part C. Contents: Structure, Evaluation, and Funding of Food and Agricultural Research. April 1982; 502 pages. NTIS order #PB 82-257 791; $46.00.

Agricultural Postharvest Technology and Marketing Economics Research—A Technical Memorandum. OTA-TM-F-21, April 1983; vii, 118 pages. GPO stock #052-003-00907-2; $5.00. NTIS order #PB 83-232 835; $14.50.

Environmental Contaminants in Food

Discusses the different types and sources of chemical and radioactive contaminants in food, considers the economic costs and health dangers they pose, and evaluates present Federal and State programs for regulating and monitoring these substances.

Environmental Contaminants in Food. OTA-F-103, December 1979; x, 229 pages. GPO stock #052-003-00724-0; $7.00. NTIS order #PB 80-153 265; $19.50.

Volume II, Working Papers: Environmental Contaminants in Food—Parts A and B. Available from NTIS:

Part A. Contents: Priority Setting of Toxic Substances for Guiding Monitoring Programs; Five Case Studies of Environmental Food Contamination. February 1980; 634 pages. NTIS order #PB 80-153 273; $44.50.

Part B. Contents: Toxic Substances in Food Information Systems; Assessment of Carcinogenic Risks From PCBs in Food; Economic Analysis of Alternative Action Levels in the Regulation of Environmental Contaminants in Food; Analysis of Foods for Radioactivity; Approaches to Monitoring Environmental Contaminants in Food; International Activities; Analytical Systems for the Determination of Metals in Food and Water Supplies; Assessment of Methods for Regulating "Unavoidable" Contaminants in Food; Consumer Risk From Environmental Contaminants in Foods. February 1980; 566 pages. NTIS order #PB 81-116 774; $39.00.

Pest Management Strategies

Reviews the array of tactics currently used to control agricultural pests and examines the potential benefits of integrated pest management.

Pest Management Strategies in Crop Protection. OTA-F-98, October 1979; xiv, 132 pages. GPO stock #052-003-00708-8; $6.00. NTIS order #PB 80-120 017; $13.50.

Volume II, Working Papers: Pest Management Strategies. Examines crop protection strategies for each of seven regional cropping systems; wheat in the Great Plains, corn in the Corn Belt, soybean in the Southeast, apple in the North, potato in the Northeast, vegetables in California, and sorghum in Texas. OTA-F-99, October 1979; xi, 754 pages. GPO stock #052-003-00709-6; $15.00. NTIS order #PB 80-120 025; $55.00.

Open Shelf-Life Dating of Food

Addresses the practicality, benefits, and costs of open shelf-life dating of food products to inform consumers of freshness and identifies Federal policy options on food dating.

Open Shelf-Life Dating of Food. OTA-F-94, August 1979; viii, 108 pages. GPO stock #052-003-00694-4; $5.50. NTIS order #PB 80-101 629; $12.00.

Drugs in Livestock Feed

Analyzes the use of antibacterial and other drugs to promote growth and prevent disease in livestock, and the implications for human health of the low levels at which these drugs are administered.

Drugs in Livestock Feed: Technical Report. OTA-F-91, June 1979; x, 67 pages. GPO stock #052-003-00685-5, $5.00. NTIS order #PB 298 450; $9.00.

Food Marketing Technologies

Examines new and emerging technologies for marketing food for their current state of development, probability of being adopted, the extent to which they are or will be used, their expected impacts, and the policy issues they raise. Also identifies those technologies that require further study.

Emerging Food Marketing Technologies: A Preliminary Analysis. OTA-F-79, October 1978; viii, 88 pages. NTIS order #PB 291 039; $10.50.

Nutrition Research

Evaluates alternative strategies to redirect Federal research toward examining the relationship between nutrition and the changing health problems of Americans. Administrative means for implementing the strategies are also considered.

Nutrition Research Alternatives. OTA-F-74, September 1978; xii, 77 pages. NTIS order #PB 289 825; $10.50.

Food Research and Development

Evaluates alternative methods for organizing and funding basic research in the biological sciences that is designed to increase food production, and identifies three specific areas that possess opportunity for fundamental scientific discoveries.

Organizing and Financing Basic Research To Increase Food Production. OTA-F-49, June 1977; vii, 38 pages. NTIS order #PB 273 182; $7.50.

Retail Food Grading

Assesses the capability of the current food grading system used by the Federal Government, as well as that of alternative systems that could be adopted, to give consumers adequate information concerning the nutritional value of food products sold on grocers' shelves.

Perspectives on Federal Retail Food Grading. OTA-F-47, June 1977; viii, 87 pages. NTIS order #PB 273 163; $10.50.

Food Information Systems—Summary and Analysis

Summarizes and integrates information generated on information systems designed to collect data on world food supply and demand.

Food Information Systems—Summary and Analysis. OTA-F-35, August 1976; xvi, 86 pages. NTIS order #PB 258 142; $12.00.

HEALTH

Medical Technology and Costs of the Medicare Program

Examines a range of policies to contain Medicare costs and impacts on the adoption and use of medical technology.

Medical Technology and Costs of the Medicare Program. OTA-H-227. In press. Contact OTA Publishing Office for further information.

Summary, Medical Technology and Costs of the Medicare Program. OTA-H-228. In press. Available free from OTA Publishing Office.

Analyzes a broad range of mechanisms to reduce or limit Medicare costs related to medical technology. Includes case studies, technical memoranda, and background papers of particular medical technologies.

Health Technology Case Study 22: The Effectiveness and Costs of Alcoholism Treatment. OTA-HCS-22, March 1983; x, 98 pages. GPO stock #052-003-00902-1; $5.50. NTIS order #PB 83-192 492; $11.50.

Health Technology Case Study 23: The Safety, Efficacy, and Cost Effectiveness of Therapeutic Apheresis. OTA-HCS-23, July 1983; xi, 165 pages. GPO stock #003-052-00918-8; $5.50. NTIS order #PB 84-114 842; $16.00.

Health Technology Case Study 24: Variations in Hospital Length of Stay: Their Relationship to Health Outcomes. OTA-HCS-24, August 1983; x, 85 pages. GPO stock #052-003-00922-6; $4.50. NTIS order #PB 84-111 483; $11.50.

Diagnosis Related Groups (DRGs) and the Medicare Program: Implications for Medical Technology—A Technical Memorandum. OTA-TM-H-17, July 1983; x, 82 pages. GPO stock #052-003-00919-6; $4.50. NTIS order #PB 84-111 525; $11.50.

Scientific Validity of Polygraph Testing

Presents the results of the OTA review and assessment of the scientific evidence on the validity of polygraph testing.

Scientific Validity of Polygraph Testing: A Research Review and Evaluation—A Technical Memorandum. OTA-TM-H-15, November 1983; viii, 138 pages. GPO stock #052-003-00934-0; $5.50. NTIS order #PB 84-181 411; $14.50.

Abstracts of Case Studies in the Health Technology Case Study Series

Contains a description of the OTA "Health Technology Case Study Series" and abstracts of each of the case studies published.

Abstracts of Case Studies in Health Technology Case Study Series. OTA-P-225, October 1983; 43 pages. Available free from OTA Publishing Office.

Gorgas Memorial Laboratory

Reviews the quality and relevance of activities at the Gorgas Memorial Laboratory (GML), based on Gorgas's publishing record, an OTA-commissioned survey of GML's scientific reputation, a critical review of recent articles and current manuscripts, a comparison of GML's areas of effort with health problems in tropical America and with scientific opportunity, a review of past scientific evaluations of GML, and an examination of its record of competing for grants and contracts.

Quality and Relevance of Research and Related Activities at the Gorgas Memorial Laboratory—A Technical Memorandum. OTA-TM-H-18, August 1983; vi, 93 pages. GPO stock #052-003-00925-1; $4.50.

Randomized Clinical Trials

Brings together the literature and current views about the actual and potential role of randomized clinical trials in decisionmaking about medical technologies.

The Impact of Randomized Clinical Trials on Health Policy and Medical Practice—Background Paper. OTA-BP-H-22, August 1983; vii, 109 pages. GPO stock #052-003-00924-2; $5.00. NTIS order #PB 84-114 560; $13.00.

Premanufacture Notices

OTA examined 740 Premanufacture Notices, and this study reports the results of analyzing those notices for the presence of the information specified by the Toxic Substances Control Act and for additional relevant information.

The Information Context of Premanufacture Notices—A Background Paper. OTA-BP-H-17, April 1983; vii, 91 pages. GPO stock #052-003-00904-8; $5.50. NTIS order #PB 83-241 059; $11.50.

Postmarketing Surveillance of Prescription Drugs

Describes the drug approval process, the history and objectives of postmarketing surveillance, the methods employed to accomplish it, and current activities in postmarketing surveillance.

Postmarketing Surveillance of Prescription Drugs. OTA-H-189, November 1982; ix, 80 pages. GPO stock #052-003-00893-9; $5.00. NTIS order #PB 83-173 625; $10.00.

Proposals To Increase Competition in Health Care

Focuses on proposals for increased cost sharing by patients and greater competition among plans.

Medical Technology Under Proposals To Increase Competition in Health Care. OTA-H-190, October 1982; xi, 156 pages. NTIS order #PB 83-164 046; $16.00.

Summary, Medical Technology Under Proposals To Increase Competition in Health Care. OTA-H-191, October 1982; 28 pages. Available free from OTA Publishing Office.

Strategies for Medical Technology Assessment

Focuses on the flow of information that is central to an effective assessment system. Critiques the current assessment system with respect to identifying medical technologies for assessment; developing and synthesizing information about such technologies' health, economic, and social effects; and disseminating this information to health care decisionmakers.

Strategies for Medical Technology Assessment. OTA-H-181, September 1982; vii, 227 pages. GPO stock #052-003-00887-4; $7.50. NTIS order #PB 83-113 274; $20.50.

Summary, Strategies for Medical Technology Assessment. OTA-H-182, September 1982; 27 pages. Available free from OTA Publishing Office.

MEDLARS and Health Information Policy—A Technical Memorandum. OTA-TM-H-11, September 1982; ix, 150 pages. GPO stock #052-003-00891-2; $6.50. NTIS order #PB 83-168 658; $14.50.

Technology and Handicapped People

Examines the specific factors that affect the research and development, evaluation, diffusion and marketing, delivery, use, and financing of technologies directly related to disabled people.

Technology and Handicapped People. OTA-H-179, May 1982; vii, 214 pages. GPO stock #052-003-00874-2; $7.50. NTIS order #PB 83-172 056; $19.00. Also available in hardback for $29.50 from Springer Publishing Co., Inc., 200 Park Avenue South, New York, N.Y. 10003. Also available in "talky book" special cassette form from the Library of Congress.

Summary, Technology and Handicapped People. OTA-H-180, May 1982; 27 pages. Available free from OTA Publishing Office. Available in braille from the Library of Congress.

Case Study #25: Technology and Learning Disabilities. OTA-HCS-25, December 1983; 72 pages. GPO stock #052-003-00936-6; $3.00.

Case Study #26: Assistive Devices for Severe Speech Impairments. OTA-HCS-26, December 1983; 64 pages. GPO stock #052-003-00940-4; $2.50.

Background Paper #1: Mandatory Passive Restraint Systems in Automobiles: Issues and Evidence. OTA-BP-H-15, September 1982; vii, 50 pages. GPO stock #052-003-00890-4; $4.75. NTIS order #PB 83-159 822; $8.50.

Background Paper #2: Selected Telecommunications Devices for Hearing-Impaired Persons. OTA-BP-H-16, December 1982; vii, 28 pages. GPO stock #052-003-00898-0; $3.50. NTIS order #PB 83-169 292; $8.50.

Working Paper #2: Toward Integrating Handicapped Children: A Case Study Analysis of the Educational Context and the Least Restrictive Environment. January 1983; 50 pages. NTIS order #PB 83-168 997; $10.00.

Working Paper #3: Sheltered Workshops. February 1983; 48 pages. NTIS order #PB 83-170 225; $10.00.

Working Paper #4: The Application of Resource Allocation Analytic Techniques to the Rehab System. February 1983; 32 pages. NTIS order #PB 83-170 233; $8.50.

Working Paper #6: Technology and Entitlements for Handicapped People: Some Problems and Solutions in Michigan. February 1983; 45 pages. NTIS order #PB 83-172 056; $10.00.

Technology Transfer at the National Institutes of Health

Presents general information on biomedical R&D and its relationship to technology transfer, and on the processes of transferring medical technology and of assessing that technology. Discusses the current technology transfer activities of NIH and contains detailed looks at two specific institutes.

Technology Transfer at the National Institutes of Health—A Technical Memorandum. OTA-TM-H-10, March 1982; vii, 188 pages. GPO stock #052-003-00869-6; $6.50. NTIS order #PB 82-202 904; $16.50.

Cost Effectiveness of Influenza Vaccine

Examines the cost effectiveness of influenza vaccine using data on health effects and medical care costs produced by influenza vaccine from 1972 to 1978. Suggests ways to increase the use of the vaccine.

Cost-Effectiveness Analysis of Inactivated Influenza Vaccine. OTA-H-152, December 1981; viii, 67 pages. GPO stock #052-003-00855-6; $5.50. NTIS order #PB 82-178 492; $9.00.

Cancer Risks From the Environment

Examines four major issues: estimates of the percentage of cancer due to environmental exposure, technologies used to test for carcinogenicity, methods used for extrapolating data from animals to humans, and regulatory path ways for controlling carcinogens.

Assessment of Technologies for Determining Cancer Risks From the Environment. OTA-H-138, June 1981; vii, 242 pages. GPO stock #052-003-00832-7; $7.50. NTIS order #PB 81-235 400; $19.50. Also available in hardback for $18.00 under the title: "Cancer Risks: Assessing and Reducing the Dangers in Our Society" from Westview Press, Sales Department, 5500 Central Ave., Boulder, Colo. 80301.

Summary, Assessment of Technologies for Determining Cancer Risks From the Environment. OTA-H-137, June 1981; 28 pages. Available free from OTA Publishing Office.

Cost Effectiveness of Medical Technology

Analyzes the feasibility, implications, and usefulness of cost-effectiveness analysis (CEA) and cost-benefit analysis (CBA) in health care decisionmaking, including the current and potential use of CEA/CBA or related techniques in six health care activities: reimbursement programs, Professional Standards Review Organizations, health planning, market approval for drugs and medical devices, R&D programs, and health maintenance organizations.

The Implications of Cost-Effectiveness Analysis of Medical Technology. OTA-H-126, August 1980; vii, 219 pages. GPO stock #052-003-00765-7; $7.00. NTIS order #PB 80-216 864; $18.00.

Summary, The Implications of Cost-Effectiveness Analysis of Medical Technology. OTA-H-125, August 1980; 28 pages. Available free from OTA Publishing Office.

Background Paper #1: Methodological Issues and Literature Review. OTA-BP-H-5, September 1980; vi, 138 pages. GPO stock #052-003-00780-1; $6.00. NTIS order #PB 81-144 602; $13.50.

Background Paper #2: Case Studies of Medical Technologies.—17 case studies:

Case Study #1: Formal Analysis, Policy Formulation, and End-Stage Renal Disease. OTA-BP-H-9(1), April 1981; viii, 25 pages. GPO stock #052-003-00809-2; $2.75. NTIS order #PB 81-209 769; $7.50.

Case Study #2: The Feasibility of Economic Evaluation of Diagnostic Procedures: The Case of CT Scanning. OTA-BP-H-9(2), April 1981; viii, 24 pages. GPO stock #052-003-00810-6; $2.75. NTIS order #PB 81-209 777; $7.50.

Case Study #3: Screening for Colon Cancer: A Technology Assessment. OTA-BP-H-9(3), April 1981; viii, 19 pages. NTIS order #PB 81-209 785; $7.50.

Case Study #4: Cost Effectiveness of Automated Multichannel Chemistry Analyzers. OTA-BP-H-9(4), April 1981; viii, 25 pages. GPO stock #052-003-00813-1; $3.25. NTIS order #PB 81-209 793; $7.50.

Case Study #5: Periodontal Disease: Assessing the Effectiveness and Costs of the Keyes Technique. OTA-BP-H-9(5), May 1981; viii, 32 pages. GPO stock #052-003-00817-3; $3.25. NTIS order #PB 81-221 780; $7.50.

Case Study #6: The Cost Effectiveness of Bone Marrow Transplant Therapy and Its Policy Implications. OTA-BP-H-9(6), May 1981; viii, 15 pages. NTIS order #PB 81-221 798; $7.50.

Case Study #7: Allocating Costs and Benefits in Disease Prevention Programs: An Application to Cervical Cancer Screening. OTA-BP-H-9(7), May 1981; viii, 32 pages. GPO stock #052-003-00818-1; $3.25. NTIS order #PB 81-221 806; $7.50.

Case Study #8: The Cost Effectiveness of Upper Gastrointestinal Endoscopy. OTA-BP-H-9(8), May 1981; viii, 21 pages. GPO stock #052-003-00815-7; $2.75. NTIS order #PB 81-221 814; $7.50.

Case Study #9: The Artificial Heart: Cost, Risks, and Benefits. OTA-BP-H-9(9), May 1982; viii, 94 pages. GPO stock #052-003-00876-9; $5.50. NTIS order #PB 82-239 971; $12.00.

Case Study #10: The Costs and Effectiveness of Neonatal Intensive Care. OTA-BP-H-9(10), August 1981; viii, 51 pages. GPO stock #052-003-00845-9; $4.25. NTIS order #PB 82-101 411; $9.00.

Case Study #11: Benefit and Cost Analysis of Medical Interventions: The Case of Cimetidine and Peptic Ulcer Disease. OTA-BP-H-9(11), September 1981; viii, 72 pages. GPO stock #052-003-00854-8; $4.75. NTIS order #PB 82-118 910; $9.00.

Case Study #12: Assessing Selected Respiratory Therapy Modalities: Trends and Relative Costs in the Washington, D.C. Area. OTA-BP-H-9(12), July 1981; viii, 23 pages. GPO stock #052-003-00843-2; $2.75. NTIS order #PB 82-101 122; $7.50.

Case Study #13: Cardiac Radionuclide Imaging and Cost Effectiveness. OTA-BP-H-9(13), May 1982; viii, 59 pages. NTIS order #PB 82-239 989; $9.00.

Case Study #14: Cost Benefit/Cost Effectiveness of Medical Technologies: A Case Study of Orthopedic Joint Implants. OTA-BP-H-9(14), September 1981; viii, 28 pages. GPO stock #052-003-00850-5; $3.50. NTIS order #PB 82-120 833; $7.50.

Case Study #15: Elective Hysterectomy: Costs, Risks, and Benefits. OTA-BP-H-9(15), October 1981; viii, 40 pages. GPO stock #052-003-00856-4; $2.75. NTIS order #PB 82-122 326; $8.50.

Case Study #16: The Costs and Effectiveness of Nurse Practitioners. OTA-BP-H-9(16), July 1981; viii, 37 pages. GPO stock #052-003-00844-1; $3.50. NTIS order #PB 82-101 064; $7.50.

Case Study #17: Surgery for Breast Cancer. OTA-BP-H-9(17). October 1981; viii, 29 pages. GPO stock #052-003-00857-2; $4.00. NTIS order #PB 82-124 181; $7.50.

Background Paper #3: The Efficacy and Cost Effectiveness of Psychotherapy. OTA-BP-H-6, October 1980; vii, 93 pages. NTIS order #PB 81-144 610; $12.00.

Background Paper #4: The Management of Health Care Technology in Ten Countries. OTA-BP-H-7, October 1980; vii, 222 pages. GPO stock #052-003-00784-3; $7.50. NTIS order #PB 81-144 628; $19.50.

Background Paper #5: Assessment of Four Common X-Ray Procedures. OTA-BP-H-14, April 1982; vii, 63 pages. GPO stock #052-003-00872-6; $4.50. NTIS order #PB 83-165 506; $10.00.

Physician Supply and Requirements

Analyzes the assumptions, methods, and conclusions of the technologies for forecasting both the need for and supply of physicians by specialty and geographical distribution.

Forecasts of Physician Supply and Requirements. OTA-H-113, April 1980; x, 86 pages. GPO stock #052-003-00746-1; $5.50. NTIS order #PB 80-181 670; $10.50.

Computers in Medical Education and Assessment

Describes current uses of computers in medicine and summarizes the impact of computer technology on medical education, practice, and evaluation.

Computer Technology in Medical Education and Assessment: A Background Paper. OTA-BR-H-1, September 1979; xii, 139 pages. GPO stock #052-003-00704-5; $6.50. NTIS order #PB 80-102 528; $13.50.

Federal Vaccine and Immunization Policies

Analyzes Federal policies related to four areas of vaccine and immunization activities: financing vaccine research and development, evaluating vaccine safety and efficacy, reimbursing for vaccine use, and compensating for vaccine-related injuries. Uses case studies involving pneumococcal vaccine.

Update of Federal Activities Regarding the Use of Pneumoccal Vaccine. OTA-TM-H-23. In press. Contact OTA Publishing Office for further information.

A Review of Selected Federal Vaccine and Immunization Policies Based on Case Studies of Pneumococcal Vaccine. OTA-H-96, September 1979; xvi, 208 pages. GPO stock #052-003-00701-1; $7.50. NTIS order #PB 80-116 106; $18.00.

Compensation for Vaccine-Related Injuries—A Technical Memorandum. OTA-TM-H-6, November 1980; ix, 105 pages. GPO #052-003-00788-6; $5.50. NTIS order #PB 81-163 909; $12.00.

Federal Health Statistics

Examines data systems used in Federal health programs and offers alternatives for their effective management. Also lists laws that authorize the then Department of Health, Education, and Welfare to collect and maintain health data.

Selected Topics in Federal Health Statistics. OTA-H-90, June 1979; xii, 212 pages. NTIS order #PB 298 449; $18.00.

Efficacy and Safety of Medical Technologies

Evaluates the need for assessments of the efficacy and safety of medical technologies before they go into widespread use. Also reports on 17 brief case studies, including mammography, amniocentesis, electronic fetal monitoring, and treatment for Hodgkin's disease, as illustrative of the technologies and issues involved.

Assessing the Efficacy and Safety of Medical Technologies. OTA-H-75, September 1978; xiii, 133 pages. GPO stock #052-003-00593-0; $6.00. NTIS order #PB 286 929; $13.50.

CT Scanners

Analyzes issues such as efficacy, health planning, use, and financing arising from the widespread adoption of the computed tomography (CT) scanner, an expensive diagnostic device that combines X-ray equipment with a computer and television-like tube to produce cross-sectional images of the body.

Policy Implications of the Computed Tomography (CT) Scanner. OTA-H-72, August 1978; ix, 195 pages. GPO stock #052-003-00565-4; $7.00. NTIS order #PB 284 872; $16.50.

Policy Implications of Computed Tomography (CT) Scanner: An Update—Background Paper. OTA-BP-H-8, January 1981; viii, 112 pages. NTIS order #PB 81-163 917; $12.00.

Policy Implications of Medical Information Systems

Examines the potential of computer-based medical information systems, which process both administrative and medical data, to affect the quality, cost, and efficiency of medical care. Examines the benefits and limitations of such systems, factors influencing their adoption, and possible Federal policy alternatives regarding their development and use.

Policy Implications of Medical Information Systems. OTA-H-56, November 1977; x, 79 pages. GPO stock #052-003-00496-8; $5.50. NTIS order #PB 274 857; $9.00.

Cancer Testing Technology and Saccharin

Assesses the capacity of current testing methodology to predict the carcinogenic potential of chemicals consumed by humans. Specifically evaluates the potential of saccharin to cause cancer in humans. Also evaluates the potential health benefits of saccharin and the availability of alternative artificial sweeteners.

Cancer Testing Technology and Saccharin. OTA-H-55, October 1977; xii, 149 pages. NTIS order #PB 273 499; $13.50.

Development of Medical Technology

Examines the need for assessing the potential social impacts of emerging medical technologies while they are being developed. In addition, formulates an initial list of questions that might be used to elicit information about the effects of such new technologies. Also presents nine brief case histories illustrating the complexities of medical technologies, their development, and the variety of questions resulting from their existence.

Development of Medical Technology: Opportunities for Assessment. OTA-H-34, August 1976; x, 104 pages. GPO stock #052-003-00217-5; $5.50. NTIS order #PB 258 117; $12.00.

Science, Information, & Natural Resources

COMMUNICATION AND INFORMATION TECHNOLOGIES

Effects of Information Technology on Financial Services Systems

Examines technologies that are likely to be employed in delivering financial services in the future; the nature of the services that may be provided; and alternative structures of the financial services industry that may emerge as a result of applying new and existing technologies, particularly as they interact with Federal policy.

Effects of Information Technology on Financial Services Systems. OTA-CIT-202. In press. Contact OTA Publishing Office for further information.

Summary, Effects of Information Technology on Financial Services Systems. OTA-CIT-203. In press. Available free from OTA Publishing Office.

Computerized Manufacturing Automation

Assesses trends and the state of R&D in computerized manufacturing technologies over this decade; the development of industries producing computerized manufacturing equipment, software, and services; the potential utility of computerized automation for various categories of manufacturing industries that might use it; impacts on employment; implications for education and training; and analyzes the impacts of Federal policy options on the development and use of computerized automation systems in U.S. manufacturing.

Computerized Manufacturing Automation: Employment, Education, and the Workplace. OTA-CIT-235, April 1984, ix, 471 pages. GPO stock #052-003-00949-8; $14.00.

Summary, Computerized Manufacturing Automation: Employment, Education, and the Workplace. OTA-CIT-236, April 1984. Available free from OTA Publishing Office.

Automation and the Workplace: Selected Labor, Education, and Training Issues—A Technical Memorandum. OTA-TM-CIT-25, March 1983; vii, 105 pages. GPO stock #052-003-00900-5; $5.50. NTIS order #PB 83-191 320; $13.00.

Technology and Education

Provides an overview of the issues relating to the educational applications of the new information technologies. It examines both the demands that the information revolution will make on education and

the opportunities afforded by the new information technologies to meet those demands.

Informational Technology and Its Impact on American Education. OTA-CIT-187, November 1982; x, 280 pages. GPO stock #052-003-00888-2; $8.00. NTIS order #PB 83-174 664; $23.50.

Summary, Informational Technology and Its Impact on American Education. OTA-CIT-188, September 1982; 24 pages. Available free from OTA Publishing Office.

Social Impacts of Robotics

Presents background information and identifies key questions and issues that were raised to the OTA staff during the course of a workshop on robotics.

Exploratory Workshop on the Social Impacts of Robotics—A Background Paper. OTA-BP-CIT-11, February 1982; vii, 136 pages. NTIS order #PB 82-184 862; $13.50.

Radiofrequency Use and Management

Analyzes the record of an 11-week conference held in Geneva, Switzerland, by major world representatives to review and adjust the global allocation of uses of the radio magnetic spectrum. Identifies the conference's major results and projected impacts and the role of U.S. participation in this and future conferences.

Radiofrequency Use and Management: Impacts From the World Administrative Radio Conference of 1979. OTA-CIT-163, January 1982; vii, 163 pages. GPO stock #052-003-00863-7; $6.50. NTIS order #PB 82-177 536; $15.00.

Summary, Radiofrequency Use and Management: Impacts From the World Administrative Radio Conference of 1979. OTA-CIT-164, January 1982. Available free from OTA Publishing Office.

Societal Impacts of the National Information Systems

Includes an overview study—Computer-Based National Information Systems—and three information system case studies—National Crime Information Center of the FBI; electronic mail and message systems; and electronic funds transfer.

Computer-Based National Information Systems: Technology and Public Policy Issues. OTA-CIT-146, September 1981; x, 166 pages. GPO stock #052-003-00852-1; $6.50. NTIS order #PB 82-126 681; $15.00.

Summary, Computer-Based National Information Systems: Technology and Public Policy Issues. OTA-CIT-147, October 1981; 28 pages. Available free from OTA Publishing Office.

An Assessment of Alternatives for A National Computerized Criminal History System. OTA-CIT-161, October 1982; xi, 208 pages. GPO stock #052-003-00896-3; $7.00. NTIS order #PB 83-166 678; $19.00.

Summary, An Assessment of Alternatives for A National Computerized Criminal History System. OTA-CIT-162, October 1982; 32 pages. Available free from OTA Publishing Office.

A Preliminary Assessment of the National Crime Information Center and the Computerized Criminal History System. OTA-I-80, December 1978; vii, 84 pages. NTIS order #PB 291 845; $10.50.

Implications of Electronic Mail and Message Systems for the U.S. Postal Service. OTA-CIT-183, August 1982; xi, 113 pages. NTIS order #PB 83-265 017; $13.00.

Summary, Implications of Electronic Mail and Message Systems for the U.S. Postal Service. OTA-CIT-184, August 1982; 24 pages. Available free from OTA Publishing Office.

Selected Electronic Funds Transfer Issues: Privacy, Security, and Equity—Background Paper. OTA-BP-CIT-12, March 1982; viii, 77 pages. GPO stock #052-003-00868-8; $4.75. NTIS order #PB 82-202 532; $9.00.

Selected Electronic Funds Transfer Issues: Privacy, Security, and Equity—Volume II: Working Papers—Parts A-G. May 1982; 613 pages. NTIS order #PB 82-238 312; $40.50.

Patent-Term Extension

Examines the benefits and efficacy of pharmaceutical innovative research and development. Identifies the effects of patent-term extension on the members of government, industry, and society.

Patent-Term Extension and the Pharmaceutical Industry. OTA-CIT-143, August 1981; viii, 74 pages. GPO stock #052-003-00842-4; $5.00. NTIS order #PB 82-100 918; $8.00.

The IRS Tax Administration System

Discusses issues of civil liberties, privacy, and due process that could arise from a new computer system—which if installed would be the largest and most sophisticated computer operated by the Federal Government—proposed by the Internal Revenue Service to replace its current system.

A Preliminary Analysis of the IRS Tax Administration System. OTA-TCI-43, March 1977; x, 206 pages. NTIS order #PB 273 143; $16.50.

OCEANS AND ENVIRONMENT

Acid Rain and Transported Air Pollutants

Characterizes the potential benefits of acting now to abate long-range transport air pollution and the potential costs of action that may be premature.

Acid Rain and Transported Air Pollutants: Implications for Public Policy. In press, OTA-O-204. Contact OTA Publishing Office for further information.

Summary, Acid Rain and Transported Air Pollutants: Implications for Public Policy. In press, OTA-O-205. Available free from OTA Publishing Office.

Wetlands

Presents the findings and conclusions of OTA's analysis of approaches to wetlands use; describes the ecological values of wetlands, trends in wetlands use, and the effect of Federal and State wetland programs on wetlands.

Wetlands: Their Use and Regulation. OTA-0-206, March 1984; vii, 208 pages. GPO stock #052-003-00944-7; $8.00.

Summary, Wetlands: Their Use and Regulation. OTA-0-207, 31 pages. Available free from OTA Publishing Office.

Maritime Trade and Technology

Traces prevailing conditions and dominant trends that are important to the way the Federal Government assumes its responsibility in developing and implementing policy; contains analyses of the world outlook for trade, shipping, and shipbuilding; identifies where the United States participates and does not participate in these enterprises.

An Assessment of Maritime Trade and Technology. OTA-O-220, October 1983; 240 pages. GPO stock #052-003-00931-5; $6.50.

Summary, An Assessment of Maritime Trade and Technology. OTA-O-221, 22 pages. Available free from OTA Publishing Office.

Radioactive Waste

Presents the findings and conclusions of OTA's analysis of Federal policy for the management and disposal of commercial high-level radioactive waste.

Managing Commercial High-Level Radioactive Waste. In press, OTA-O-171. Contact OTA Publishing Office for further information.

Summary, Managing Commercial High-Level Radioactive Waste. OTA-O-172, April 1982; 64 pages. Available free from OTA Publishing Office.

Freshwater Resources Management

Considers a wide range of models and predictive methods of the credibility of the techniques used to predict the work of water resource projects and regulations, and the societal and environmental effects of these decisions.

Use of Models for Water Resources Management, Planning, and Policy. OTA-O-159, August 1982; vii, 242 pages. GPO stock #052-003-00880-7; $7.50. NTIS order #PB 83-103 655; $20.50.

Summary, Use of Models for Water Resources Management, Planning, and Policy. OTA-O-160, August 1982; 27 pages. Available free from OTA Publishing Office.

Ocean Research Technology

Identifies the technologies and management systems that are most effective in researching four areas: weather and climate, marine pollution, undersea mineral exploration, and fisheries.

34-604 O - 84 - 2

Technology and Oceanography: An Assessment of Federal Technologies for Oceanographic Research and Monitoring. OTA-O-141, June 1981; vii, 161 pages. GPO stock #052-003-00833-5; $6.50. NTIS order # PB 82-101 718; $15.00.

Volume II, Working Papers: Technology and Oceanography: Fishery Research Technology. June 1981; 248 pages. NTIS order #PB 82-101 726; $19.50.

Coal Exports and Port Development

Addresses four major issues that are important to Federal policy debate: estimating the potential U.S. coal export market, development of foreign trade policy, the Federal role in dredging harbors, and the outlook for alternative technologies.

Coal Exports and Port Development—A Technical Memorandum. OTA-TM-O-8, April 1981; vii, 84 pages. GPO stock #052-003-00807-6; $4.75. NTIS order #PB 81-203 358; $10.50.

Ocean Margin Drilling

Evaluates the newly proposed public-private cooperative research effort in marine geology, its scientific merits, problems of technology development, aspects of private participation, Government management, and possible alternatives to the program.

Ocean Margin Drilling—A Technical Memorandum. OTA-TM-O-4, May 1980; 115 pages. NTIS order #PB 80-198 302; $12.00.

Renewable Ocean Energy Sources; OTEC

The 1978-79 reports examine renewable ocean energy sources that are considered possible contributors to our future energy supply, and evaluates the technical problems and policy decisions that will affect further development of these sources. The 1980 and 1984 reports review and update status of ocean thermal energy conversion (OTEC) developments, including technical accomplishments and remaining technical uncertainties.

Part I: Ocean Thermal Energy Conversion. OTA-O-62, May 1978; viii, 44 pages. NTIS order #PB 283 104; $7.50.

Working Papers, Part I: Ocean Thermal Energy Conversion. OTA-O-63, May 1978; xi, 113 pages. NTIS order #PB 283 103; $13.50.

Working Papers, Part II: Ocean Winds, Currents, Waves, Tides, and Salinity Gradients. March 1979; ii, 150 pages. NTIS order #PB 295 876; $15.00.

Recent Developments in Ocean Thermal Energy—A Technical Memorandum. OTA-TM-O-3, April 1980; 32 pages. NTIS order #PB 80-201 825; $7.50.

Review of Ocean Thermal Energy Systems. A staff paper, January 1984; 33 pages. Contact the OTA Oceans and Environment Program for availability.

Liquefied Natural Gas

Evaluates the status and trends of ongoing and proposed projects involving the transportation and handling of liquefied natural gas, analyzes the technology involved, and discusses nine economic, technological, regulatory, political, and social areas of concern.

Transportation of Liquefied Natural Gas. OTA-O-53, September 1977; xii, 101 pages. NTIS order #PB 273 486; $12.00.

200-Mile Fisheries Zone

Evaluates the problems and opportunities presented by the new 200-mile U.S. fishery zone, as well as alternative methods for implementing, managing, and enforcing regulations for the zone.

Establishing a 200-Mile Fisheries Zone. OTA-O-45, June 1977; x, 134 pages. NTIS order #PB 273 578; $13.50.

Working Papers: Establishing a 200-Mile Fisheries Zone—Consists of five working papers containing data and analysis used as background material for OTA's assessment on implementing the 200-mile fisheries zone. OTA-O-46, June 1977; v, 375 pages. NTIS order #PB 273 579; $28.50.

Coastal Effects of Offshore Energy Systems

Assesses social, economic, and environmental impacts of three proposed offshore energy systems—development of oil and gas resources, deepwater ports for oil tankers, and floating nuclear powerplants—on the coastal areas of New Jersey and Delaware, with implications for other coastal areas in the United States and elsewhere in the world.

Coastal Effects of Offshore Energy Systems. OTA-O-37, November 1976; xvi, 288 pages. NTIS order #PB 274 033; $22.50.

Working Papers: Coastal Effects of Offshore Energy Systems—Contains 10 working papers prepared by various experts in appropriate fields that were used in OTA's assessment of the coastal effects of offshore energy systems. OTA-O-38, November 1976; vii, 932 pages. NTIS order #PB 274 034; $28.50.

Brochure: Coastal Effects of Offshore Energy Systems—Summarizes certain findings and public policy alternatives of OTA's assessment of the coastal effects of offshore energy systems. OTA-O-39, December 1976; 15 pages. Available free from OTA Publishing Office.

Oil Transportation by Tankers

Examines safety problems of oil tankers and their potential effect on the ecology and quality of the oceans and coastal areas.

Oil Transportation by Tankers: An Analysis of Marine Pollution and Safety Measures. OTA-O-9, July 1975; xvii, 288 pages. NTIS order #PB 244 457; $24.00.

SCIENCE, TRANSPORTATION, AND INNOVATION

U.S. Passenger Rail Technologies

Assesses high-speed passenger rail technologies, foreign experience with high-speed rail, and issues related to introduction of the technologies in the United States. Railcar manufacturing and magnetic levitation are also included.

U.S. Passenger Rail Technologies. OTA-STI-222, December 1983; x, 120 pages. GPO stock #052-003-00938-2; $4.75.

Summary, U.S. Passenger Rail Technologies. OTA-STI-223, December 1983, 24 pages. Available free from OTA Publishing Office.

Civilian Space Stations

The ongoing OTA assessment of civilian space stations is examining a range of options regarding the development, acquisition, use, and ownership of appropriate long-term infrastructure elements in near-Earth space. The assessment is also examining the possible long-range goals and objectives that should play a large part in determining these infrastructure elements.

The technical memorandum now available examines the major past accomplishments, the current capabilities, and the probable future direction of the Soviet Union's Salyut space station program.

Salyut: Soviet Steps Toward Permanent Human Presence in Space—A Technical Memorandum. OTA-TM-STI-14, December 1983; viii, 80 pages. GPO stock #052-003-00937-4; $4.50. NTIS order #PB 84-181 437; $13.00.

Technology, Innovation, and Regional Economic Development

Identifies and describes the efforts of State and local governments, universities, and private sector groups to promote the creation, expansion, and retention of high-technology firms and industries.

Census of State Government Initiatives for High-Technology Industrial Development—Background Paper. OTA-BP-STI-21, May 1983; v, 74 pages. GPO stock #052-003-00912-9; $4.50. NTIS order #PB 84-104 033; $11.50.

Encouraging High-Technology Development—Background Paper #2. OTA-BP-STI-25, March 1983; vii, 98 pages. GPO stock #052-003-00942-1; $4.75. NTIS order #PB 84-180 181; $11.50.

Space Science Research

Summarizes and critiques the views of many people interested in space science, several of whom attended an OTA workshop on May 5, 1982.

Space Science Research in the United States—A Technical Memorandum. OTA-TM-STI-19, September 1982; vii, 50 pages. GPO stock #052-003-00895-5; $4.75. NTIS order #PB 83-166 512; $10.00.

Review of FAA National Airspace System Plan

Critiques the FAA National Airspace System Plan, with emphasis on changes from previous proposals; delineates technological options and alternative strategies of implementation within the general framework of the FAA plan; and analyzes issues of benefits and costs to the Government and airspace users.

Review of the FAA 1982 National Airspace System Plan. OTA-STI-176, August 1982; x, 69 pages. GPO stock #052-003-00881-5; $5.00. NTIS order #PB 83-102 772; $10.00.

Civilian Space Policy and Applications

Explores the question of Federal involvement in space research and development (R&D), the issues that arise in the transition from R&D to full-fledged operational status, when and under what circumstances commercial involvement is appropriate, and how to respond to commercial competition from overseas.

Civilian Space Policy and Applications. OTA-STI-177, June 1982; ix, 391 pages. GPO stock #052-003-00878-5; $9.50. NTIS order #PB 82-234 444; $28.50.

Summary, Civilian Space Policy and Applications. OTA-STI-178, June 1982; 28 pages. Available free from OTA Publishing Office.

Global Models, World Futures, and Public Policy

Evaluates methodologies, findings, and implications of Global 2000 and other global modeling studies. Examines present use and potential usefulness of this technology as a powerful tool for long-range strategic analysis and policy development.

Global Models, World Futures, and Public Policy. OTA-R-165, April 1982; vii, 120 pages. GPO stock #052-003-00870-0; $5.50. NTIS order #PB 82-251 299; $13.50.

Airport and Air Traffic Control System

Provides a perspective on both airport development aid and the Federal Aviation Administration's proposed air traffic control system modernization.

Airport and Air Traffic Control System. OTA-STI-175, January 1982; viii, 141 pages. GPO stock #052-003-00873-4; $6.00. NTIS order #PB 82-207 606; $15.00.

Technology for Local Development

Addresses the question of local development and the opportunities for—and appropriateness of—various technologies that can help local people to take advantage of local resources in meeting the needs of their own communities.

An Assessment of Technology for Local Development. OTA-R-129, January 1981; vii, 258 pages. GPO stock #052-003-00797-5; $7.50. NTIS order #PB 81-189 979; $21.00.

Impact of Advanced Air Transport Technology

Examines recent advances in the technology of high-speed aircraft and analyzes the economic, environmental, energy, societal, and safety impacts of their widespread introduction. The assessment has been published in four parts: passenger service, program financing and management, service to small communities, and air cargo operations.

Part 1: Advanced High-Speed Aircraft. Assesses the economics, feasibility, and uncertainties of developing advanced subsonic and/or supersonic passenger aircraft. OTA-T-112, April 1980; ix, 106 pages. GPO stock #052-003-00745-2; $5.50. NTIS order #PB 80-200 504; $10.50.

Summary, Part 1: Advanced High-Speed Aircraft. OTA-T-111, March 1980; 27 pages. Available free from OTA Publishing Office.

Part 2: Air Cargo—Background Paper. Analyzes air cargo operations, including the historical background and current status of the air freight industry, economics of air freight, the potential market, competitive concerns and the potential for technological change in future cargo aircrafts. OTA-BP-T-10, January 1982; viii, 54 pages. GPO stock #052-003-00853-0; $4.75. NTIS order #PB 82-186 818; $9.00

Part 3: Air Service to Small Communities. Assesses the economic impacts of low density service, the determinants of market size, conditions of competition, deregulation of the domestic commuter airline industry, and availability of air service to small communities. OTA-T-170, February 1982; viii, 46 pages. GPO stock #052-003-00864-5; $3.25. NTIS order #PB 82-186 800; $7.50.

Part 4: Financing and Program Alternatives for Advanced High-Speed Aircraft—Background Paper. Examines the potential financial and managerial barriers to carrying out—at some future date—a large-scale program to create a new high-speed, long-range commercial air transport employing new technology. OTA-BP-T-14, August 1982; vii, 49 pages. GPO stock #052-003-00882-3; $4.75. NTIS order #PB 83-110585; $10.00.

Advanced Group Rapid Transit

Examines second-generation automated guideway transit systems as part of a solution to the need for improved urban mass transit. Assesses the technical and economic impacts of system development, evaluates policy options in deployment, and identifies issues requiring further analysis.

Impact of Advanced Group Rapid Transit Technology. OTA-T-106, January 1980; viii, 58 pages. NTIS order #PB 80-153 323; $9.00.

Summary, Impact of Advanced Group Rapid Transit Technology. OTA-T-107, January 1980; 23 pages. Available free from OTA Publishing Office.

The Automobile Transportation System

Describes energy, environmental, safety, and cost impacts of technological changes and assesses policy options pertaining to the future use and characteristics of the private car and its supporting systems through the year 2000.

Changes in the Future Use and Characteristics of the Automobile Transportation System: Volume 1—Summary and Findings. OTA-T-83, February 1979; viii, 39 pages. GPO stock #052-003-00649-9; $4.75. NTIS order #PB 293 645; $7.50.

Changes in the Future Use and Characteristics of the Automobile Transportation System: Volume II—Technical Report. OTA-T-84, February 1979; vii, 375 pages. NTIS order #PB 293 646; $28.50.

Changes in the Future Use and Characteristics of the Automobile Transportation System: Volume III—Public Participation. OTA-T-100, October 1979; vii, 72 pages. NTIS order #PB 81-115 545; $10.50.

Railroad Safety

Evaluates trends in railroad-related accidents, their effects on the railroad industry, and the effectiveness of Federal laws and policies in reducing fatalities and injuries as well as property losses.

An Evaluation of Railroad Safety. OTA-T-61, May 1978; xvi, 224 pages. NTIS order #PB 281 169; $18.00.

Automated Guideway Transit

Examines the social and economic implications of introducing new mass transit technologies in U.S. cities, as well as the means by which three new personal transit technologies might be implemented.

Automated Guideway Transit: An Assessment of Personal Rapid Transit and Other New Systems. OTA-T-8, June 1975; xiii, 401 pages. NTIS order #PB 244 854; $28.50.

Specialized Reports

Natural Hazards

Evaluates trends in disaster assistance and preparedness; examines the potential for a program of hazards management through prediction, reduction, and control; and identifies the policy issues and economic impacts of such a program.

U.S. Disaster Assistance to Developing Countries: Lessons Applicable to U.S. Domestic Disaster Programs—Background Paper. OTA-BP-X-1, January 1980; vi, 29 pages. NTIS order #PB 80-153 760; $7.50.

Criteria for Evaluating the Implementation Plan Required by the Earthquake Hazards Reduction Act of 1977—Background Paper. OTA-BP-X-2, January 1980; viii, 67 pages. NTIS order #PB 81-241 663; $10.50.

Issues and Options in Flood Hazards Management—Background Paper. OTA-BP-X-3, February 1980; xii, 96 pages. NTIS order #PB 80-151 087; $12.00.

Demographic Trends Influencing Education

Examines demographic trends such as birth and death rates, mobility patterns, women in the marketplace, and ethnic makeup of populations, and their likely effect on elementary and secondary schools in the near- and long-term future.

A Preliminary Analysis of Demographic Trends Influencing the Elementary and Secondary School Systems. Publishing in "General Issues in Elementary and Secondary Education: Hearings before the Subcommittee on Elementary, Secondary, and Vocational Education." Out of print, a copy may be inspected at the OTA Information Center, 600 Pennsylvania Avenue, S.E., Washington, D.C.

Technology Assessment in Business and Government

Summarizes and analyzes the evolution and influence of technology assessment as a tool for policymaking in Government, business and industry, and the academic research communities, as brought out in 4 days of hearings held June 1976 by the OTA Board.

Technology Assessment in Business and Government: Summary and Analysis. OTA-X-42, January 1977; xii, 32 pages. NTIS order #PB 273 164; $6.50.

Hearings: Technology Assessment Activities in the Industrial, Academic, and Governmental Communities—Compilation of the record of 4 days of hearings by the OTA Board on the development and practice of the technology assessment concept and use of the results of technology assessment in decisionmaking in business (academic research institutions, and Government). OTA-X-41, December 1976; v, 391 pages. NTIS order #PB 273 435; $28.50.

Administrative

Informational Brochure

States OTA's purpose, outlines its organization, and describes some of its projects completed or in progress.

What OTA Is, What OTA Does, How OTA Works. OTA-PC-104 (Revised March 1983); 16 pages. Available free from OTA Publishing Office.

Assessment Activities

Lists and briefly summarizes OTA's current projects, publications in press, recent publications, and selected publications of interest (updated periodically).

Assessment Activities. OTA-PC-105 (Revised March 1984); 44 pages. Available free from OTA Publishing Office.

Annual Reports

The Annual Report presents detailed assessments of the work accomplished by OTA in the preceding year, including a review of management and administrative functions. Of particular importance is a thorough report on the various studies produced by OTA and specific indications of their implications for the technological community. Indications of work in progress are provided and remarks from the OTA Board are included to indicate the extent of congressional oversight.

Annual Report to the Congress January 1 to September 30, 1983. OTA-A-226, March 1984; iii, 74 pages. Available free from OTA Publishing Office.

Annual Report to the Congress for 1982. OTA-A-208, March 1983; iv, 128 pages. Available free from OTA Publishing Office. NTIS order #PB 83-187 203; $14.50.

Annual Report to the Congress for 1981. OTA-A-149, March 1982; iii, 109 pages. NTIS order #PB 82-202 862; $12.00.

Annual Report to the Congress for 1980. OTA-A-131, March 1981; iii, 104 pages. NTIS order #PB 81-189 748; $12.00.

MAIL ORDER TO:

NTIS

National Technical Information Service
U.S. DEPARTMENT OF COMMERCE
Springfield, Va. 22161
(703) 487-4650 TELEX 89-9405

For DDC Users Only

DDC User Code _____

Contract Number _____
(last 6 characters only)

Treasury Agency Location Code
For Government Users
(who report on SF-224)
(8 digit)

☐☐ ☐☐ ☐☐☐☐

Date _____

PURCHASER: Telephone: _____

SHIP TO:
(Enter if different from address above)

Name _____

Organization _____

Address _____

City, State, ZIP _____

Attention: _____

METHOD OF PAYMENT

- ☐ Charge my NTIS deposit account no. _____
- ☐ Purchase order no. _____
- ☐ Check enclosed for $ _____
- ☐ Ship & Bill. See reverse (not applicable outside North America).
- ☐ Charge to my American Express Card account number

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Card expiration date _____

Signature _____

Order Options

Normal delivery time takes 3 to 5 weeks. It is vital that you order by number or your order will be manually filled, insuring a delay. You can opt for *First Class delivery* for a $3.00 charge per item. Just check the *Airmail Service* box. If you're really pressed for time, call the NTIS Rush Handling Service (703) 487-4700. For $10.00 charge per item, your order will airmailed within 48 hours. Or, you can pick up you order in the Washington Information Center & Bookstore or at our Springfield Operations Center within 24 hours for a $6.00 per item charge.

ITEM NUMBER ***	USER ROUTING CODE (see reverse)	Quantity			UNIT** PRICE	AIRMAIL* SERVICES	TOTAL PRICE
		Paper Copy	Micro-fiche	Other (specify)			

*Add $3.00 per item for First Class Delivery in North America.
Add $4.00 per item for Airmail Delivery outside North America.
**ALL PRICES SUBJECT TO CHANGE.
***If ordering by title or if item ordered is a magnetic tape, please see reverse side.

Enter Grand Total $

USER ROUTING CODE: NTIS can label each item for routing within your organization. If you want this service put your routing code in the box marked USER ROUTING CODE (Limit eight characters).

SHIP & BILL SERVICE: Prepayment helps to expedite your order and can be accomplished through the use of an NTIS Deposit Account, check, money order, or American Express Card Account Number • For "Ship and Bill," NTIS charges $5.00 extra for *each order* (regardless of the number of items); $5.00 extra for *each* Published *or* On-line NTISearch; and $2.50 extra for *each* subscription (Government agencies exempt) • NTIS does not "Ship and Bill" for magnetic tapes, or for orders outside North America.

ORDERING MAGNETIC TAPE: (check mode)

☐ 7 track ☐ 200 BPI ☐ 556 BPI ☐ 800 BPI ☐ odd parity ☐ even parity ☐ 9 track ☐ 1600 BPI ☐ 800 BPI (odd parity)

ORDERING BY TITLE: If ordering without an item number (by title only) allow an additional two weeks.

TITLE #1

Sponsor's Series #	Contract or Grant Number of Report	Date Published
Originator (Give specific laboratory, or division and location.)		Personal Author
Turn to other side. Write "1" in the Item Number block and complete the rest of the line.		

TITLE #2

Sponsor's Series #	Contract or Grant Number of Report	Date Published
Originator (Give specific laboratory, or division and location.)		Personal Author
Turn to other side. Write "2" in the Item Number block and complete the rest of the line.		

TITLE #3

Sponsor's Series #	Contract or Grant Number of Report	Date Published
Originator (Give specific laboratory, or division and location.)		Personal Author
Turn to other side. Write "3" in the Item Number block and complete the rest of the line.		

TITLE #4

Sponsor's Series #	Contract or Grant Number of Report	Date Published
Originator (Give specific laboratory, or division and location.)		Personal Author
Turn to other side. Write "4" in the Item Number block and complete the rest of the line.		

TITLE #5

Sponsor's Series #	Contract or Grant Number of Report	Date Published
Originator (Give specific laboratory, or division and location.)		Personal Author
Turn to other side. Write "5" in the Item Number block and complete the rest of the line.		

U.S. GOVERNMENT PRINTING OFFICE : 1977—O-225-092

NOTICE

Government documents' prices are subject to change without prior notice. Therefore, prices in effect when your order is filled may differ from prices on the list. Since it is not feasible to change prices shown in Government documents in print, the price printed in a document may differ from the price in effect when your order is processed.

ORDER FORM To: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

Enclosed is $ _____ ☐ check,
☐ money order, or charge to my
Deposit Account No.

☐☐☐☐☐☐☐–☐

Order No._____

VISA®

master charge THE INTERBANK CARD

Credit Card Orders Only

Total charges $_____ Fill in the boxes below.

Credit
Card No. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Expiration Date
Month/Year ☐☐☐☐

Name—First, Last

Company name or additional address line

Street address

City State ZIP Code

(or Country)

PLEASE PRINT OR TYPE

For Office Use Only

	Quantity	Charges
Enclosed		
To be mailed		
Subscriptions		
Postage		
Foreign handling		
MMOB		
OPNR		
UPNS		
Discount		
Refund		

PUBLICATIONS REQUESTED

Title: _____

_____

GPO stock #: _____; Price: _____

Title: _____

_____

GPO stock #: _____; price: _____

Title: _____

_____

GPO stock #: _____; price _____

Title: _____

_____

GPO stock #: _____; price _____

Title: _____

_____

GPO stock #: _____; price _____